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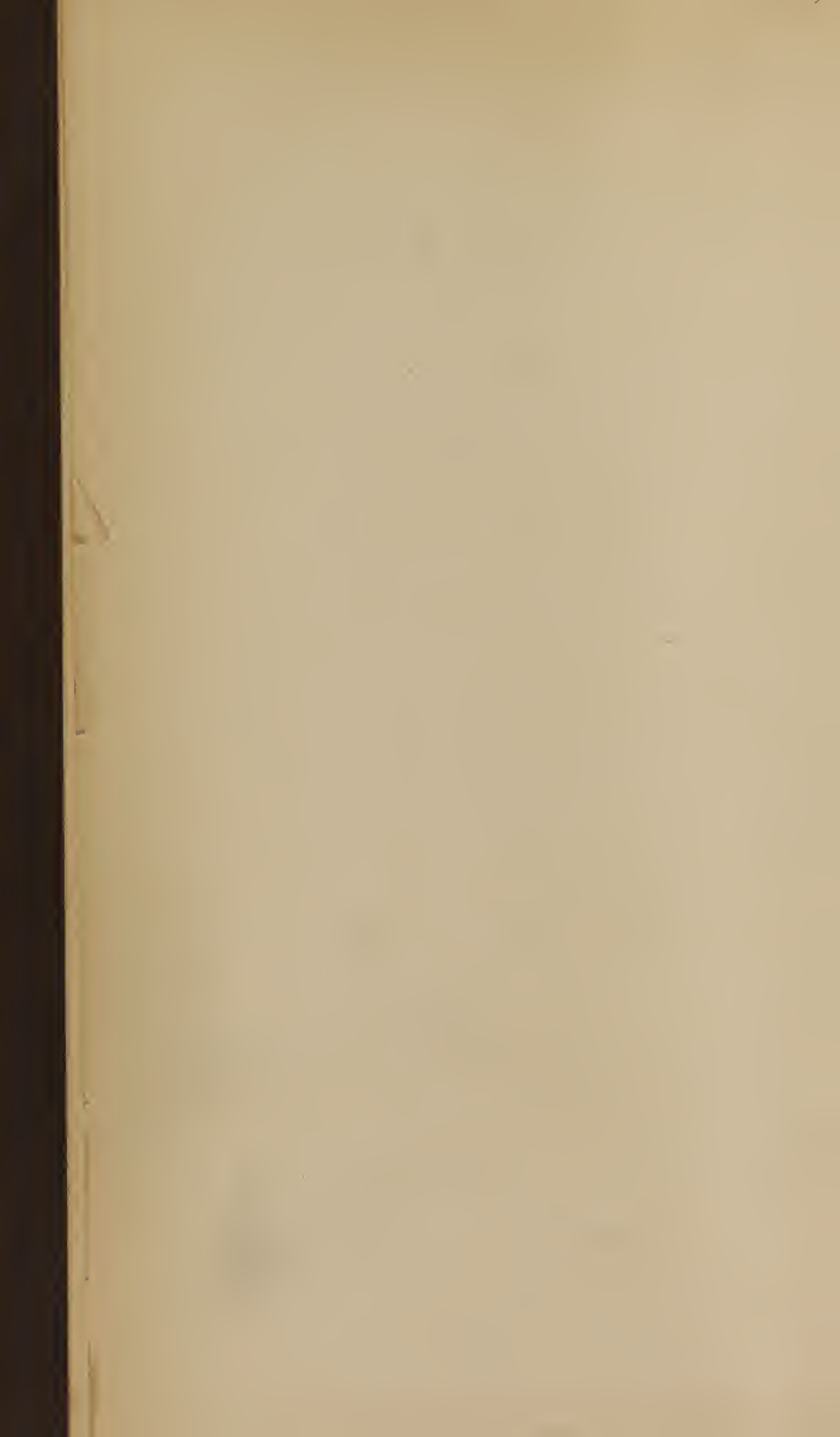
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THE
INDIGESTIONS;

OR

DISEASES OF THE DIGESTIVE ORGANS
FUNCTIONALLY TREATED.

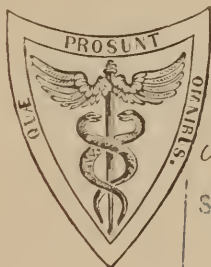
BY

✓
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THIRD AMERICAN EDITION REVISED.

John L. Sullivan



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PREFACE TO THIRD EDITION.

SINCE publishing my first edition, I have inserted upwards of ten dozen cases, and have re-arranged, indeed in part re-written, the comments upon them. This has added greatly to the bulk of the volume, whjch has now probably attained full growth. A third edition is not yet required in England, so I send the MS. for publication to America. I have faith in the kindly feeling with which it will be received there.

T. K. C.

64 BROOK STREET;
Dec. 1869.

PREFACE TO SECOND EDITION.

IN 1856 I published a small volume on the same subject that I am now again taking up. It has been a good while out of print, for I was not content with it enough to sanction a reproduction in the same shape. But I have always intended to handle it again some time or another. During the last year or so I have been looking over my old notes of cases, and it struck me that it would be interesting to pick out such as bore upon indigestion, to classify them according to the points they illustrated, and see how far they upheld or overthrew my previous views. Then linking them together, after the fashion of a clinical teacher, with a running commentary, I made them tell their own tale, and added such observations as either occurred to me at the time I had the patients under my eye, or have flowed from after experience. So grew up, not the new edition I had thought of, but what consistency bids me call a new work. It has therefore a new title, pointing to the different aspect in which the subject is viewed. In the former work it was anatomically, here it is functionally treated.

So pleasant has been the holiday task thus

“ to the sessions of sweet silent thought
To summon up remembrance of things past,”

that I am fain to dwell upon it, and to try to lead others towards the same source of enjoyment by describing the way in which my store has been heaped up. For it is needless to say I did not lean on my memory alone, or the number of trustworthy histories would have been few indeed.

The cases of those who are named as inmates of St. Mary's

Hospital in the following pages are copied mainly from the diary kept by the clinical clerks. I have been always used to make this a chief source of teaching. The clerk was instructed to take notes with the sick person before him, and in his own words; and when he read them out at my visit, I added my observations, sometimes in the hospital case-books, sometimes in my own. These formed the groundwork on which to build my clinical lectures for the current week. They are irregular in wording, but preserve a fair record of the disease.

The details of private practice have been kept in a shorter and more mechanical way. I make it a rule, to which exceptions need be very few, to write all prescriptions and papers of advice in a copying-book, which makes a duplicate of them by means of transfer paper; and at the back of this transcript I write, usually with the patient before me, his history, at least so far as to explain my reasons for the advice, before I go on to the next page. The periodical indexing of these sheets is an easy job for an hour of weariness; and the whole time consumed is so crumbled up that it is never missed, and neither business nor amusement feels itself robbed.

Some people tell me they can make their notes of the day's work more fully and scientifically when it is over, and they are quiet in their study. I do not like the plan so well. For one thing it interferes with the relaxation needed to keep the mind healthy and broad. That time belongs to rest—*datur hora quieti*—and should not be wasted on labor. An instinctive feeling of the truth of this causes a duty which is put off to such an opportunity to be put off often still further, often altogether. Again, unless an immediate note be made, the new and the strange in the day's experience are stamped in the mind deeper than the common-place, and so they are apt to take up more than their fair share of room in the diary; while personal friendship, the social standing of the patient and other considerations will sometimes blot out, sometimes unduly brighten our recollections of the case.

To these brethren in art, then, as well as to others more emphatically who have hitherto failed to put by any written record at all of their acquired knowledge, I earnestly commend the method. Independently of the advantages to patients of being able to cast back to their antecedents, whenever you see them again and at whatever interval, the not perhaps wholly selfish satisfaction of living over again at will any portion of your professional life is worth tenfold the trouble it gives. Its value to the public is directly proportioned to the value of the individual himself; his experience is a simple fraction of himself.

I cannot expect the reading of my notes to be as agreeable to others as it is to me. Still, the gracious way in which even rough clinical sketches are received in the shape of lectures, makes me hope that these studies, being of a quasi-clinical nature, may have some of the same favor shown them. A still higher reward would be that my testimony to the pleasantness of the task should lead others, richer dowered than I am, to unbarn the harvest of their experience in its own living form, instead of merely the distilled essence of it in their opinions.

In this second edition I have added a few cases which seemed more illustrative of the matter in hand than those previously quoted; but I have not altered the form of a running commentary, in which the work was first put before the public, and which readers tell me they find agreeable.

T. K. C.

22B, BROOK STREET, GROSVENOR SQUARE;

May, 1867.

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THE INDIGESTIONS.

CHAPTER I.

INTRODUCTION.

THERE is no pedantry in etymological definition when its object is to lead the writer and reader better to understand one another. So I shall not shrink from risking a charge of over-precision when, the first time I use in the following pages a word capable of various interpretation, I often stop to say what I mean by it. And at the present stage of the volume let us not grudge a few pages to some questions of nomenclature, and trying to make words really mean things.

First, then, as to the title of my volume—let the use of a negative designation stand as a witness of my persistent belief in what I have made it my chief aim to urge in all teaching of medical theory and practice for some years; namely, that all disease is for the physician essentially a deficiency of life, an absence of some fraction of the individual organization of force, and that all successful medical treatment must aim at a renewal of vital action. I do not feel myself called upon here to repeat the arguments I have used at the bedside, in the lecture-room, and in print for that faith; but I am more than ever convinced, as years roll on, of the soundness of the principle, and of the safety of applying it to practice.

The knowledge of the deficiency can be gained only through knowledge of that of which it is a deficiency. Physiology is the only guide to the pathologist, and all just views of disease must have a direct reference to health, just as the — must be preceded by an expressed or implied + for it to have an arithmetical power.

In a former work, alluded to in the preface, out of which the present volume has grown, this was timidly shadowed forth in the arrangement of the parts—"Digestion" and "its Derangements"—

two books with an equal number of corresponding chapters with similar headings, each as it were complementary to the other; the organs being exhibited by the first book in their typical state, by the second in its deviations; both being in fact equally manifestations of physiological laws. My reasons for now passing over the first part of the subject are mainly a desire to diminish the size of the volume, and partly a feeling that recent special writers on physiology have placed in the hands of our countrymen most of the information which, when I wrote, existed only in foreign periodicals and theses. All that, and more, is now so easy of access in a readable form, that one may be excused from reprinting it.

The link drawing into one class the morbid phenomena which are the subject-matter of this volume is *a partial defect in the necessary supply of that of which the body is built up, before it arrives at the medium of distribution.*

It is worth while to pause a little over this definition and on what it implies. The essence of "digestion" consists in absorption from a canal communicating with the external air into a closed system of tubes where is contained the nutritive fluid. Preparatory to this absorption is solution, aided by nerves and muscles; and the end of it is assimilation, or the conversion of the substances received into a like nature with the fluid they float in. Till this has been done they cannot be used for the nutrition of the body.

The blood is the floating capital lying between assimilation and nutrition—a treasury liable to continuous drafts from the latter, and requiring therefore constant supplies from the former to keep up its efficiency.

HEALTHY digestion is *quick, complete, and easy.* There can be no excess of it, for food cannot be too quickly and completely converted into chyme and taken into the blood, and there is no such thing as too much health and bodily comfort.

IN ILL HEALTH digestion is impaired in one or more of these qualities—it becomes *slow, defective, and painful.*

We may use Greek words, and call the above-named erring qualities of the digestion *Bradypepsia*, *Apepsia*, and *Dyspepsia*; only let it be remembered, that making the old adjectives into new substantives adds no one whit to our knowledge—nay, unless care be taken, runs some risk of being a stumbling-block to its progress. For when we have in this way given a proper name with a capital letter, we are apt to think (like a naturalist with a new butterfly),

that we have defined an individual and active motive power, instead of what is really the deficiency of a function. And thus we fall into the errors of our forefathers, whose efforts to destroy their abstract foe the "Disease," instead of restoring the existing patient, led to so much bad practice in the generation now passing away. I shall generally use the English adjectives, but first I will say shortly what I mean by them in this connection.

By digestion being *slow*, I mean that the act in some part of the alimentary canal is not completed by the time when the convenience of the individual requires that it should be completed. The stomach may retain so much of a former meal that it is not in a fit state to receive the new one which is needful for the sustenance of the body. Hence arises a want of the natural appetite and (when it is long continued) imperfect nutrition, anæmia, debility, &c. Or, if we attempt to force food too quickly on the unwilling stomach, we have chemical decomposition and defective digestion as consequences.

The average time by which the stomach should have naturally emptied itself varies in different healthy persons from two to four hours. The intestines have extracted all that they are capable of absorbing in eight or nine hours; and the relics of complete digestion are ready for expulsion from a vigorous young person in twenty-four hours.

By *defective* digestion, I would imply that food capable of nourishing the body cannot do so from lack of certain changes which it should naturally undergo in the alimentary canal. It is passed from thence either unaltered or chemically decomposed. There are seen in the feces, either by the naked eye or the microscope, masses of starch, muscular fibre, fat, &c. I have several times had them brought to me, under the idea that they were worms, pieces of intestine, or other foreign bodies. Or else the products of their decay, consisting of various obnoxious gases and acids, are developed in a quantity subversive of social comfort.

Painful digestion may be both defective and slow; but, on the other hand, it not unfrequently also is complete and performed with sufficient quickness. All that it is intended to express by the word is its accompaniment, at some stage of its progress, by feelings varying from slight discomfort to absolute agony.

Patients depict very well the first-named sensations by saying, in answer to the question whether they have any pain, no, but that

they feel where their stomachs are, and know where their food goes to. And at the other end of the scale I have heard the consequences of an ordinary meal described by a theologian (who ought to know) as "the tortures of the damned."

These impairments of the function and their symptoms I would hold to constitute the disease "Indigestion" or "Dyspepsia."

There are those who would banish from our nomenclature names, such as these, based on a functional view of disease, and would substitute for them derivatives from a part, whose anatomical changes of structure are supposed to be the cause of derangement. I confess that in former writings on this subject, I attempted a division of the forms in which dyspepsia is manifested according to the glands whose secretion may be supposed to be affected. I thought we could assign some to the oral and œsophageal, some to the gastric and some to the intestinal portions of the alimentary canal—that we might identify indigestion of starch with lesion of the salivary glands of the mouth, indigestion of albumen with degeneration of the mucous membrane of the stomach, indigestion of fats with some structural injury to the intestine. But experience has unfortunately not confirmed my hopes of finding any such trenchant anatomical distinction of the cases which come before us. It seems to me now that a healthy state of stomach and duodenum is as essential as a healthy state of mouth to the digestion of amylaceous matters; that the salivary and intestinal secretions aid powerfully the digestion of albumen; and that even fat is affected by an imperfect activity of the stomach. At the same time, *post-mortem* experience certainly has not hitherto exhibited the presence of lesions of these parts in the subjects of indigestion, while it has exhibited their presence in those whose history has been free from the pains of that disease. What the anatomy of the future may do I cannot prophesy; the anatomy of the present certainly does not afford a basis for the classification of indigestions.

In the following chapters I intend the sketches I give of morbid phenomena, and the simple classes into which I divide the indigestions, to apply equally, whether they are alone, or whether they are united to obvious and more fatal organic changes. I would make no distinction between "Essential" or "Idiopathic," and "Symptomatic." I think it leads to dangerous practice. In reality all the parts and functions of the body are so knit together in one to form the great circle of life, that their comparative value to

individual existence is more a question of time than of power. The failure of any one shortens the days more or less, and the immediate cause of death is as often "a mere symptom" as an organic change. It is also a serious consideration that in respect of the patient in chronic pathological states this is in reality often the whole duty of the medical adviser, and I fear it is generally neglected. Often, on stating in consultation an opinion that some viscus is chronically degenerated, one is met by the remark, "Well, what is to be done?—we cannot cure that." Very likely not; then let us try and find something else which we can cure. In a majority of patients this curable something may be found in functional impediments to the entrance of nutriment into the medium of assimilation; and when once nutriment can be got in, a cure is begun. Do not, therefore, let us indulge despair even after it has become certain that the time is past for restoring the principal viscus which gives a name for registration to the disease, and though little can be prescribed to heal the part mainly affected. It is seldom too late to try and administer to the failing organ the most potent of all remedies, the human blood of the patient himself, made healthy by the means adopted, and flowing in continuously by its own natural channels.

I remember, when I was physician to St. Mary's, talking to the pupils on this subject (as was my wont) when we came to a new patient, an undergrown, undeveloped girl, the mitral orifice of whose heart was narrowed by rheumatic inflammation in childhood. On her being carried into the hospital, her face was like that of a corpse, and she could not stand without fainting. I presume no sane student expected to see means used for the dilatation of that valve, whose contraction was the source of evil: despair was not an illogical conclusion from the diagnosis I dictated to the clinical clerk, and I was but little surprised to hear behind my back the remark, "This, at all events, is not much of a case for treatment." Yet observation of the functional state of the alimentary canal, indicated by the cedematous tongue and fauces, made me improve the opportunity by expressing an opinion that she would "walk home with color in her cheeks." A month afterwards I was able to say, at a clinical lecture on the case, "This she has been able to do, and the better nourished heart now beats steadily and evenly; though its mitral orifice is as small as ever, if the ear and stethoscope are to be trusted."

And not once, but almost weekly, have I demonstrated to the same class, with respect to many a consumptive, how little it helped us to know that half of the upper lobe of each lung was filled with crude tubercles: pulmonary remedies had been of no benefit; but the reflection that the stomach was secreting an excess of mucus at the same time with the lungs, led to effectual means for the relief of both together.

In the physiological cure of diseases it is almost impossible to exaggerate the importance of the digestive viscera. In every acute case, surgical or medical, the modification of the result produced by our efforts rests almost entirely on how far, how wisely, or how foolishly these organs are watched over; whether they are well or ill treated, either by the scientific guidance of the skilled physiologist or by the empirical rules of the routine practitioner, according to the tradition of the nurse or the instinct of the patient. Each of these may be in its way a useful guide; but the first is at least most capable of improvement by labor.

As regards chronic diseases also, science enables us to trace, by steps more or less distinct, many of them not manifested in the organs themselves, but affecting the whole body, to an abnormal state of the digestive viscera. It needs but to name gout, tubercle, and anæmia, to engage our closest attention to their causes.

The fact is that indigestion, intervening between the blood and the new matter with which it seeks to renew itself, perverts incipient life at its very source, and thus perverts all its future manifestations. It produces a great variety of morbid phenomena as immediate or remote consequences, and affects more or less all the functions of the body.

Whatever value we may attach to the evidence of the dependence of disease on the digestive organs, it is very clear that we look to them for relief from disease. Out of the six or seven hundred forms of medicines in habitual use, very few indeed are not occasionally offered to the stomach for acceptance, and an overwhelming majority of them are adapted for employment only in this way. If we are still to work with these time-honored tools in our attempts to cure bodily ailments (and I see no threatening of a change at present), it is surely a matter of great interest to secure the active condition of what our forefathers in anatomy picturesquely called the *portal*. When a sudden poison or paralysis has fallen on this gate of entrance, our hands are paralyzed too; the staffs we lean on fail us, and we are fain to confess it waste toil to try and enter

locked doors. The great advantage of paying special attention to the digestive organs is that, as a rule, they are more directly curable, and that by their means distant parts, otherwise out of our control, may be favorably influenced. The evil of neglecting them is obstinate disobedience of the body of the patient to any medicine administered.

Watch a case of typh-fever, and see what immediate improvement follows the shedding of the dead epithelium with which the mucous membranes have been coated—a change which is announced by what is called the “cleaning of the tongue,” but which foreshadows much more, in fact the cleaning of the whole intestinal tract. See how immediately on this the poisoned nervous system begins again to renew its life, and delirium ceases, as new nervous matter fit for duty is generated. Or watch another less fortunate case of the same malady, how as the tongue gets dirtier and drier and browner each morning, the weakness of the nervous and muscular system increases, and hour by hour hope is more and more clouded over. The difference between one case and another, between those patients who are a credit and a joy to us and those who continue to wring our hearts with anxiety, mainly lies in the more or less vitality of the abdominal mucous canal.

We must remember it is of no use to employ the best possible means of staying the morbid symptoms, unless the absorbents assimilate sufficient material to replace that which is diseased, and to remove which we are bestowing our pains. Labor is wasted in clearing away a worn-out wall, if a new structure does not take its place. To that end the only path is to insure the assimilation of food. And to insure the assimilation of food, the stomach and its colleagues must be in working order. So that in point of fact the only fair trials of depletory measures must be connected with feeding, and those who would uphold the good fame of such expedients must be careful of their patient's digestion.

But even if diseases of the alimentary organs had not so much influence as they possess on the duration of life, their extreme frequency would alone entitle them to attention. Unfortunately, it has had a contrary effect: medical men are apt to set down what is so common as inevitable. They neglect indigestion as unimportant, forgetful that though its removal may not perhaps always lengthen lives, yet that it would at all events treble their value both to individuals and to society.

The digestive tract all the more imperatively demands attention,

because it has not the advantage enjoyed by the respiratory and by the upper part of the urinary apparatus, and other parts, of being double. Man has two lungs, two kidneys, two hemispheres to the brain, two testicles or ovaries, two sides to his body generally; but only one stomach, and one intestinal canal. A reason for great caution in preserving their integrity—there is less to spare for disease to affect. A deposit of tubercle (for instance) the size of a nut in the pulmonary tissue may be neither here nor there, may be never known by its effects. But put it in the peritoneum, or in Peyer's glands, and what a disturbance is produced! A man may lose a leg or an arm, and enjoy life very fairly afterwards; but let him lose the use of his œsophagus or of his rectum, and what can he hope for?

This singleness helps to explain the powerful influence which derangement of any one of its parts has not only over the whole tract, but over the whole body and mind. No chain is stronger than its weakest link, and an interruption of the function at one point is an interruption of the whole.

It also has a bearing of considerable importance on the treatment. It is extremely difficult to obtain that rest which is so essential in the management of disease. If you have pneumonia, you may give a holiday to the smitten lung and recover with the other; but if you have an equally acute inflammation of the œsophagus or stomach, the danger is great, because they are necessarily in constant use.

It is perhaps unfortunate that morbid anatomy here gives us less help than in any other classes of disease; the degenerations of the digestive viscera found in the dead body have less causal relation to the phenomena during life than in other cases. The fact is that the changes usually taken cognizance of by the morbid anatomist are those of solids exhibiting faulty processes essentially posterior to the blood, dependent on perverted nutrition, or on mal-directed or arrested destructive assimilation; whereas, as has been mentioned before, indigestion is a defect anterior to the blood, anterior to constructive assimilation. One result of this is, that it is impossible to gain that condensation which deductive teaching may assume, and the subject is loaded with a vast quantity of clinical details, if it is to be treated to practical profit.

I trust that what I have said will be enough to justify my making a separate study and a thickish volume of a subject which takes so little place in the Registrar-General's list of diseases and in the sketch-book of the morbid anatomist.

CHAPTER II.

INDIGESTIONS, ACUTE AND CHRONIC.

ACUTENESS AND CHRONICITY.

THE division of diseases primarily into Acute and Chronic, as proposed by the Methodics, was really a most important step towards a practical classification. But the point of it has been fatally missed. Galen led the way, by introducing the artificial element of time, pedantically limiting acuteness to a definite number of days. Of course, nobody now thinks there is any essential difference between an inflammation which lasts twenty-one days and an inflammation which lasts twenty-two; and so we find writers and lecturers on the fundamental institutes of medicine of late, rather apt to make light altogether of the distinction between acute and chronic, or, at least, to make no use of it. The anatomical turn of the medical mind, during the first half of the current century, leads it to see, and to fail to see, just the same points as the anatomist Galen.

What the Methodics really meant may be judged by the writings of their rather shambling expositor, Cælius Aurelianus—by the adoption of the new term "*chronius*" or "*chronicus*," from the Greek, instead of "*longus*," which did not express the idea¹—still more by the nature of the diseases classed as "acute" and "chronic" by Cælius himself and by Aretæus. By "*acute* diseases" they meant such as have a tendency to progress in a circle towards the recovery of health: each process, however dangerous and abnormal it may be, being a step towards the final arrival at that result, if only the patient's strength hold out. While of "*chronic*," the natural road is straight on from bad to worse, unless from the interposition of some extraneous circumstances of accidental or designed origin foreign to the phenomena of the disease itself. Dr. Pierre Petit, in the Preface to his "Commentary on Aretæus," compares the

¹ The College of Physicians have unfortunately, with a pruriency for purity, gone back to the word "*longus*" as a Latin equivalent for "chronic" in their "Nomenclature of Disease."

former to race-horses, which run round to the goal, unless they founder on the way: we might in the same strain compare the path of the latter to that fatally facile descent which leads to Avernus.

This division of diseases is of the most essential importance when we test the value of remedies. Nearly all the fallacies which overload our pharmacopœia, not to mention a variety of theories ending in—"pathy," which crop up from time to time, flow from watching the acute element in disease as an index of the effect of a drug. A very moderate portion of medical logic will suffice to show that it is only from the numerical comparison of the experience of many public institutions, for many years, that an opinion can be formed in acute disease, concerning that effect. While, by observing its action in chronic disease, one cautious man may, from a very moderate number of well-considered cases, come to a rational conclusion as to the value of any really active medication.

I am used, therefore, to insist very much on the difference between acuteness and chronicity in instructing pupils. I believe the idea to be of great importance in the formation of the medical mind. And even in the treatment of the limited subjects we are now engaged upon, it must not be passed over; for in the most chronic cases there are acute phenomena, and in acute cases there are sometimes elements of chronicity, which require a just estimate to be formed of them, when we come to test the efficacy of medication.

ACUTE INDIGESTION.

Acute indigestion is a sudden paralysis of the functions of the digestive organs, arising from a passing cause, and tending to cure itself by the removal of the cause, and a return to health. The French call it "*embarrass gastrique*," as if the stomach was "barred" or "embarrassed" for a time. If "*gastrique*" be taken to include the whole alimentary canal, the term is unobjectionable.

The observations of Dr. Beaumont on the living anatomy of the stomach, quoted in every text-book of physiology, teach us that the whole of the functions of that organ are equally impeded: the circulation is arrested, so that there is congestion of the blood-vessels: the nerves, and consequently the muscles, of the viscus are dormant, so there is no peristaltic motion, and the contents lie like a dead weight: the peptic secretion is not poured forth, so that

the surface of the membrane is bare in patches and in patches covered with an unshed crop of epithelium.

What Dr. Beaumont saw in St. Martin's stomach after an excess, is prolonged upwards to the mouth, and seen by us there, if the effects of that excess last long enough to make it worth while to send for a doctor: the congestion of the throat, the sluggishness of the sensory and motory nerves, the irregularly distributed coating of epithelium are visible to our naked eyes. As is the case whenever the vitality of nerves is lowered, there is pain in various degrees of intensity, accompanied by a loss of cutaneous sensitiveness—stomach-ache and anæsthesia of the epigastrium. Often the morbid state is prolonged downwards into the bowels, producing flatus and diarrhœa at first, followed by costiveness afterwards, both evidences of a paralytic condition of the peristaltic fibres: more often, however, the relaxed condition of the œsophagus enables the distended stomach to overflow upwards by vomiting, and the reflex action of the diaphragm aids its relief. Fresh life then gradually returns to the tissues of the digestive organs, and the patient may be said to be spontaneously cured.

The simplest cause of acute indigestions is the swallowing more food of an insoluble nature than the stomach can bear. Masses of woody fibre, as occurring in uncooked domestic vegetables, is the commonest instance of this.

CASE I.¹—Mrs. D—, aged 50, sent for me one afternoon this spring of 1866, to see her a few miles down in the country. I found her slowly recovering from an attack of "spasms of the chest" (epigastrium), which had lasted twenty-four hours, leaving the epigastrium tumid and drummy on percussion. She had passed one small light-colored pultaceous stool, so I gave her a rhubarb and peppermint draught to elicit another or two.

I directed my principal attention to discover the exciting cause of the stomach-ache, and believed that I rightly fixed on a large cold early dinner, accompanied by a quantity of salad and cucumber. I gave a warning against this, and then went to the village hard by to see an old patient, a poor cousin of the one who had summoned me, making my visit to the wealthy relative an excuse for not taking a fee.

A short time afterwards I received a second summons; found Mrs. D— had another attack of spasms, had vomited, and was better. But what was my surprise to see in the basin a large quantity of cucumber, against which I had given such a strong warning. I found reason for believing that this apparent act of gluttony was committed as an excuse

¹ Case CXXX. in 2d edition.

for getting me to see the less fortunate neighbor again. The vomiting made the attack pass over quicker than the former one, and no purgative was required. The contents of the basin were very slightly acid.

Though called "spasms" by the patient, there is no evidence in these cases of muscular contraction; indeed, examination of the epigastrium shows the stomach distended with a more than ordinary amount of solid matter and air. The seat of the pain is not easy to fix when it is severe. In the lighter cases, and as it passes away, it seems to tend towards the pyloric sphincter, and to become located there. It remits from time to time, but hardly ever quite intermits. The pathological condition of the viscus principally concerned would seem to be analogous to the over-distension for too long a period of the bladder with retained urine, in which the pain has a like remittent character, justifying the application of the epithet "spasmodic" to it. It arises in a stomach rendered atonic or paralytic temporarily by some depressing agent, such as heat or fatigue, or a poisonous agent, or by the oppressive weight of an overload of insoluble matter—an overload either absolute, or comparative to the remaining muscular energy of the organ. It usually commences from five to six hours after the ingestion of the food which has produced it, becomes gradually more intense, and passes off either by the insoluble mass getting through the pylorus or by vomiting.

I cite this case in preference to others, first, because it is more agreeable to contemplate excesses which have a tincture of virtue and goodness, than those which are mere records of folly and gluttony. It exhibits also examples of two terminations, both spontaneous, of the attack, by vomiting and by the bowels; and it shows that the former is the least painful.

Mark, too, the last paragraph; it is clearly not "acidity," but distension, which causes the pain.

It is more frequently, however, as members of society than as physicians, that we come across examples of acute indigestions from this cause. People do not like to parade these weaknesses before strangers needlessly.

CASE II.¹—In the summer of 1842, the writer started without his breakfast early in a row-boat from the top of the Lago di Como. He was out in the sun without food till noon, when he bought his hatful of hard peaches and little green figs, and finished them at a sitting.

¹ Case CXXVII. in 2d edition.

In the afternoon pain across the epigastrium gradually came on, but still he ate his dinner. That seemed to ease the pain for a time, but it came on again worse and worse in paroxysms, just like eramp. He travelled on in an open carriage from Como to Milan, but the pain was very bad. On the road he vomited, not his dinner, but the skins of the figs and the peaches in the state in which they were swallowed. After arriving at Milan at midnight he vomited again, this time the dinner eaten in the afternoon. Soon after the second vomiting, the spasmodic pains abated and ceased with sleep.

Remark how the masses of food got vomited in the order in which they were taken: the last swallowed was thrown up last, being the heavier material, and sinking therefore to the bottom in obedience to the laws of gravity. The stomach had become by paralysis a mere dead vessel instead of an active churn.

The natural relief of vomiting may be advantageously anticipated by art.

CASE III.¹—The same party in the following year lunched on a dozen or so of pears at Leipsie, after a hot dusty journey from Dresden. Again the pain was relieved by dinner, but returned afterwards. An emetic of mustard and water gave relief rather sooner than waiting for the spontaneous evacuation of the stomach.

In the examples above cited, the excess was a simple one—more of insoluble vegetable fibre was swallowed than the stomach could in reason be expected to pass onwards before it was tired out with its exertions. At other times the excess is relative; the stomach is already incapacitated from doing its usual work, and an ordinary meal is an excess.

CASE IV.²—The same party, when not in very strong health last spring, committed the imprudence of seeing a troublesome patient before breakfast. At noon pain in the epigastrium came on, was relieved by a mutton-chop at luneh, returned worse an hour afterwards. In the evening vomiting was induced, and the first things that came up were the toast and water-eress eaten at breakfast. With sleep the attack passed off, but the epigastrium still remained abnormally tumid and resonant on pereussion. The skin of it was less sensitive than natural, when tested by the pins and eard.

In this instance the quantity ingested was not excessive, but the vitality of the organ was lowered by mental exertion, at an unwonted hour, and before the body had been fortified by food. It was therefore unable to bear its ordinary allowance and became paralyzed by distension with it.

¹ Case CXXVIII. in 2d edition.

² Case CXXIX. in 2d edition.

The insensitiveness of the cutaneous surface in the neighborhood of painful viscera is a remarkable nervous phenomenon. It may be observed mostly indeed in acute indigestion, but sometimes also in chronic, though in a less conspicuous degree. When made out, it is a valuable aid to diagnosis, as distinguishing neuralgia or paralyzed nerve-power from destructive lesions of tissue. When the stomach is ulcerated, cancerous, or the like, the skin of the epigastrium is normal in its sensibility; when the epigastric uneasiness or pain arises from defect of nerve-power, as in ague, neuralgia, or hysteria, then there is a certain anæsthesia of the cutaneous surface.

The effect of bodily exhaustion differs in nowise from that of mental in producing acute indigestion after even moderate food.

CASE V.¹—A healthy young woman, after being on horseback eight hours in a hot sun, first took a short nap, and then sat down to dinner, of which she partook moderately, having but little appetite. In the evening she suffered much from tightness across the chest; in the night was unable to sleep for flatulence coming up in eructations, and rolling about the bowels; she vomited, went to sleep, and the next day was well.

In other cases the disturbance proceeds further on in the intestinal canal.

CASE VI.²—In 1863, during my autumn holiday in Switzerland, I had sauntered up from Zermatt, and spent the afternoon on the Riffelberg. (I remember it well, for it is the last Alpine climb I shall ever have.) A little before dinner I was joined by a gentleman whom I had seen some days before stepping out well on the Theodule glacier, and who was evidently used to the high Alps. He had now just come from the ascent of Monte Rosa in a shorter time than usual, and both he and the guides confessed to being tired. He dined moderately well, and after dinner proposed to accompany me back to Zermatt. We set off accordingly, but long before we arrived at our destination he was taken with flatulence and eructations, which shortly led to gripings and diarrhœa, with extraordinary explosions of wind. I felt very glad that darkness had cleared the road of all wayfaring spectators, and that we had a guide with us. However, we got down all right, and the next day he was none the worse.

Sometimes the diarrhœa is later in its supervention, yet not entirely escaped from.

¹ Case IX. in 2d edition.

² Case X. in 2d edition.

CASE VII.¹—S. G. S.—, after a tedious ride across the Sierra in Andalusia, vomited a luncheon of bread and cheese which he had eaten. Feeling a want of appetite and a disgust to meat, he afterwards dined lightly on soup, bread and vegetables. In the night and next morning he had frequent eructations, and in the afternoon of the day following the exertion, griping and diarrhoea, with much flatulency. Throughout the attack the urine was very high-colored, being as dark as porter, though not scanty. A day's rest set all to rights.

In these temporary attacks there is a general feverishness of the system, marked by anorexia, high-colored urine, thirst, and dryness of throat, in a degree proportioned to the severity of the attack. The pulse is weak, the hands and feet are cold, and often the whole body drenched with sweat. Headache is not usual. Where it occurs in a marked degree, the patient will generally be found to be of a nervous temperament, and the affection passes into what I shall in a future chapter call "Sick-headache."

Following the diarrhoea, which the failure of the stomach to expel the peccant material renders necessary to recovery, there is often costiveness. This is not a morbid condition; it is simply a reaction, similar to that which follows the physiological effects of a purgative: and it is wise not to interfere with it.

Such attacks as these are not evidences of bad health, for they arise only in consequence of unnecessary exertions. The medical treatment consists mainly in saying, "Don't." That, however, is more often required than would be supposed: people have a notion that great out-goings demand great immediate in-comings, and load their stomachs in proportion to the exercise they are taking. This is wrong; a night's sleep should always intervene between weariness more than ordinary and the reception of even the usual quantity of food. A tired stomach is a weakened stomach. No persons more require this warning than Londoners, even medical Londoners, out for their annual holiday. They make violent muscular efforts, and then eat and drink as usual, till they are really debilitated by a succession of slight indigestions, and return to work weaker than they left it.

There is a portion of the community whose dependent condition throws imperatively on those old enough to reason, the absolute responsibility of their escape from avoidable pain. It is the business of adults to know what infant stomachs can bear and what

¹ Case XI. in 2d edition.

they cannot bear. Above all in mothers is ignorance inexcusable. Yet, is it not almost universal? Is not acute indigestion in infants the most common disease known? Is not medical attendance on the baby, for acute indigestion, almost always as regular a part of the accoucheur's monthly duty as the aid he gives to the mother? And is it not notorious that the cause is not in the helpless child, but in the food given it?

I will cite a few examples of several degrees of the disease.

CASE VIII.—Alberta C— never received any nourishment, except from her mother's breast, till she was seven weeks old; when one evening the fount of life was beguiled, by a curiosity to see the Sultan, into staying out till two in the morning. The nurse, in consequence, was obliged to feed her charge with cow's milk diluted, sweetened, and warmed into a semblance of human. She could not tell the difference, I dare say, but the baby's absorbents could, and before morning it was suffering the effects of insoluble lumps of cheese in the digestive canal. There were languor, disgust to the breast, pain announced by a plaintive wail, explosions of wind up the œsophagus, vomiting after attempts to suck; then later slight diarrhœa of whitish matter of a fetid sour smell.

A second attempt at artificial feeding, a week later, caused again flatulence, diarrhœa, and streaks of blood in the motions.

Both these attacks were immediately recovered from by a return to health without loss of flesh on resumption of normal diet.

CASE IX.—A few years ago I was asked by a relative to see his baby, which was undergoing a great amount of daily physicking for diarrhœa. It was about five weeks old, and the mother was unable to suckle it. An experienced monthly nurse, famous for bringing children up by hand, had it in charge, and was giving it diluted milk, gruel, Robb's biscuits, &c.; and it had also a quantity of suspicious-looking powders from the doctor. The poor creature was much emaciated by diarrhœa of nearly a fortnight's duration, and rejected by vomiting a great part of its victuals. In consequence it did not sleep, and was sadly emaciated and old-looking. I instantly drove off, and fetched a healthy young wet-nurse, who afterwards remained with the family as nurse-maid. The next day I had the satisfaction of seeing the baby sound asleep in her arms, and no more physic was needed.

CASE X.—I began to practise in London as physician to the Chelsea Dispensary in 1844, and a great impression was made on my mind by the following patient, because it was one of the first I had under my care. It was a child about two months old, whose mother had gone out as a wet-nurse, while the grandmother brought it up by hand. It had done pretty well for a fortnight or three weeks, the old woman said, only having wind and diarrhœa "like other babies" (as if improper food and indigestion were the normal condition of man!). Then it began to fall away to nothing, was always whining, and its motions quite ran away from it like water. On examination

of the stools, they were light grass-green in color, smelt like the abdomen of a corpse, and contained little specks of white curd. Some specks of blood had formerly been seen on the napkin, but not at this stage of the disease. The child got colder and colder, the features more pinched, the eyes more sunk, till death mercifully released it. I fired off at the disease all that Dr. Underwood, all that Marshall Hall advised at that era, of the contents of the dispensary, with no advantage to the innocent sufferer, but with the vast advantage to me, of leading me to question their efficacy, and never to employ them again as a substitute for mother's milk.

These three cases represent three degrees of infantile acute indigestion. The first turned towards health the moment the exciting cause of disease was removed, before any loss of substance, so rapid in infants, had occurred; the second recovered its health and flesh immediately, it had a fair chance; the third never had its fair chance, and succumbed accordingly.

This is not so much a disease of infancy, as a disease of the diet of infancy. In diet is its origin, and in diet is its cure. I shall recur to this subject in discussing the varieties of food indigested.

The opposite extremity of life is equally characterized by delicacy of the digestive viscera. The older the stomach is, after the prime of life is passed, the less it can bear either long abstinence or the overloading which is consequent thereon in a person of active pursuits. Probably the gastric glands have preceded the muscles of the extremities in that degeneration which is a first step towards senility. It is very difficult sometimes to make robust ancients believe this, or understand why moderate exertion, an exertion which does not tire the remainder of the body, should tire their stomachs.

CASE XI.¹—John E—, a sturdy, hard-featured fox-hunter, aged 73, who had lived in the country farming and riding to hounds all his life, and never been ill before, came to me in November, 1863, complaining that for the two months past, whenever he undertook any of the usual exertion entailed by his active life, he was overwhelmed with flatulence. The abdomen swelled up, and he passed wind first upwards and then downwards; after which he felt relief, if he took rest. He was well so long as he kept quiet, but each fresh occasion for muscular effort brought back the uncomfortable symptoms. I prescribed for him, as suitable to his time of life, more sedentary habits, to take luncheon and late dinners, instead of a heavy midday meal and high-tea, as his custom had been, and to aid nature with a course of quinine and strychnine.

¹ Case XII. in 2d edition.

In this instance it was pretty clear that the defective vital power of the stomach was the first indication of approaching old age, and was a warning that habits more suitable to that inevitable event must be adopted.

In persons debilitated by chronic causes, the same sort of acute indigestion is apt, first, to follow from slighter excitants, and, secondly, to produce more severe effects, and so they are more liable than the previous class to come under the doctor's care.

CASE XII.—Catharine S—, aged 31, was a single woman, who supported herself in a great measure by her needle, but was unable to do hard work. For from childhood she had been weakly, and before puberty had suffered from partial necrosis of the leg bones; and since then, although she has had no definite illness, her abdomen has been liable to swell, she is always thin, and her monthly periods are irregular, the flow being sometimes excessive, sometimes absent. She was subject also to fainting fits. This history she related when she was brought to St. Mary's by a policeman, who picked her up in the street taken with one of these faintings early in the afternoon. (July 4th, 1858.) It appeared that the cause was her having been supplied with a rather larger dinner than ordinary, which she was unable to digest. It lay heavy on her stomach that day, and the next morning she threw it up. The bowels opened of their own accord without diarrhœa. She was ordered iron, and a few days' rest in hospital.

Here, as in the former cases, the meal was probably no larger than the body required for the work it was called on to do; but the weakened body contained a weak stomach, which refused to digest, and was thrown into a state of paralytic dilatation by the weight of the natural quantity of victuals.

In cases of imperfect nutrition, we must be cautious of loading the digestive organs too suddenly. We must not give them what an ordinary stomach can bear, till they are as strong as an ordinary stomach.

The main point, however, to be insisted upon in the treatment is not so much a caution against overloading, as the importance of strengthening the failing part. Our attention should be directed not to coddling and spoiling the weakly urchin, or saving the work, but to training him up to do his work. This was the intention of the iron given the atrophic needlewoman, and I do really think treatment by drugs, if of the right sort, most important in such cases.

Feverishness, indicated by a quick pulse and thirst, will some-

times remain for several days, even after the stomach has cured itself by evacuation. In these cases there is generally tenderness at the epigastrium, a furred tongue and a foul smelling mouth, as if the whole upper part of the digestive mucous tract remained congested and unrenewed. The injury may extend even further down the abdominal canal, and pain be felt at the next easily sensitive point to the stomach, namely, the ileo-cæcal valve.

CASE XIII.—Widow W—, aged 64, was admitted to St. Mary's, April 13th, 1860. It appeared that she was quite well up to the 9th, when she ate a good dinner, and immediately checked the digestion of it by drinking a large quantity of coffee, contrary to her usual habits. Pain succeeded, and then vomiting, which evacuated the stomach and then ceased. But since that she had entirely lost appetite, complained of pain all over her body, and of constant thirst.

On admission, the tongue was much furred, the pulse 92. Her bowels were costive. There was pain in the right iliac fossa, increased by pressure, and a certain amount of tenderness also in the epigastrium.

Half an ounce of castor oil was administered, and the patient ordered to rest in bed a couple of days, after which the feverishness went off, and she was discharged well.

These cases are not easy to distinguish from slight continued fever (febricula) in one visit. The diagnosis is fortunately of not much importance.

The costiveness of the bowels is an aid to it, if, for example, in the above case the ileo-cæcal pain had been due to typhoid fever, there would have been diarrhoea, or at least gurgling on pressure of the cæcum. Another is the date of the supervention of abdominal pain; in acute indigestion it precedes the other symptoms, in continued fever it is of late occurrence. Another is the history of rigors, which are rarely absent in continued fevers of any type, and rarely present in acute indigestion, except as an accompaniment of the vomiting. Exacerbation at night, and a restless insomnia, with a tendency to delirium instead of sleep, should also make us prepare for the more severe disorder, as these symptoms are not presented in acute indigestion.

Instead of affecting the night watches, attacks of acute indigestion are rather apt to arise with the sun, in people who dine late or sup to their usual extent after bodily or mental exhaustion. As compared with other times of supervention, I think they are usually more sharp and severe in the early morning.

CASE XIV.¹—E. N. S.—, an energetic but not strong business man, of middle age, has had several of these morning attacks, which he can always trace to a dinner of insoluble matters after an anxious day's work. He is always a good deal alarmed at the time, the pain is very excessive in the epigastrium, producing cold brow-sweats, small quick pulse, and complete prostration, and, indeed, having once been treated as peritonitis; but they pass off in the course of the forenoon, either by vomiting or pultaceous stools. The matters vomited I have never seen, but he says they retain the taste of food, and are not acid or fermenting.

The cold of the morning air has, in some cases, apparently considerable influence in producing these attacks. They would seem to have a relation to acute catarrhs of other mucous membranes, but they are certainly much shorter in duration than those of the bronchi, fauces, or Schneiderian membrane.

CASE XV.—*April 25, 1867.*—H. J.—, Esq., æt. 35, has a situation in the post-office, which obliges him to be up at 4 in the morning three days in the week, and, besides his obligatory work, he undertakes the duties of a secretaryship to a society as well. So it is not surprising to find him a hurried individual, who gives himself no time to enjoy or digest his victuals. Since Christmas last, he has been subject to frequent attacks of spasmodic stomach-ache, which begin on rising and continue till the middle of the day, when they cease gradually without vomiting or diarrhœa. These attacks have grown more and more frequent, so that now he has one at least every week. The epigastrium is tumid on examination, and the drumlike resonance of the stomach extends over a broader space than usual, but the rest of the abdomen is naturally flat. Between the attacks he is well.

Ordered quinine and strychnine, with three minims of hydrocyanic acid, twice a day.

On *May 5*, he reports that he has had one attack since, and, indeed, was suffering then from the languor consequent upon it. He says, however, that he is quite sure he has no pain between the attacks.

I omit the hydrocyanic acid from the draught, and desire him to take two tablespoonfuls of tincture of valerian in case of threatened stomach-ache.

A week or ten days after, he reports that he has had no complete attack, though threatenings have alarmed him. He comes for a certificate to get him a month's holiday, which is necessary to establish his health.

Remark here how each attack weakened the resistance of the stomach, so that they became more frequent; and how the organ was falling into a chronic condition of indigestion, indicated by its dilatation, and requiring a course of drugs to assist its recovery.

¹ Case CXXXI. in 2d edition.

I am told by fishmongers, that these attacks are very common in their trade, induced by the early exposure to damp and cold on market mornings, and that the best thing to keep them off is a cup of hot soup on rising from bed. The next best thing is hot bread and milk or *café au lait*.

Occasionally they assume a more decided catarrhal character, causing tumefaction of the mucous membrane of the stomach and duodenum, and so a partial stoppage of the bile-duct and jaundice. When so severe as this a catarrhal attack will cause rigors, but then it exhibits at the same time, in consequence of its severity, other very marked symptoms which serve easily to distinguish it from typh-fever.

CASE XVI.—Sarah D—, aged 45, a single woman in service, was admitted to St. Mary's Hospital, February 22d, 1861. She had been attacked nine days previously with shiverings and pain round her waist, loss of appetite, some thirstiness, and some thickening of the urine, and at the same time constant vomiting of all ingesta.

On admission she was found to have pain on pressure in the right side of the epigastrium and right hypochondrium, and the skin and conjunctivæ were lightly jaundiced. But yet the liver excreted a sufficient amount of bile, for the stools were yellow. The vomiting continued, but was not constant, being principally excited by food.

She was treated with ten leeches to the right hypochondriac region, followed by a continuously applied warm linseed poultice, and effervescing ammonia draughts three times a day, and 5 grains of hydrargyrum cum cretâ night and morning.

By March 1st she had lost the vomiting and nearly the jaundice, but still was unable to lie except on the back, by reason of the pain she felt in the right hypochondrium. On the 6th, though able to take cinchona and ordinary diet, she still felt pain when she sat up, walked, or lay on the side opposite to the pain. By the 12th I suppose these discomforts had vanished, for the patient is entered as "Discharged cured" on that day.

If leeches, poultices, &c., are not applied, such cases may run on to common inflammation, and if they do, the danger is very great indeed. Acute gastritis is one of the most grave disorders known.

The "Hydrargyrum cum Cretâ" is the record of a dead faith. I mentioned it merely as a matter of fact, not for imitation.

Acute indigestion of solids is a common result of the action of the poison of exanthematous fevers on the stomach. In scarlatina, especially, the congested state of the throat is probably continued

in the stomach, and unless in very robust persons the convalescence of the digestive power is peculiarly tardy.

CASE XVII.¹—Lucy P—, aged 22, a servant of all work, debilitated previously by a long rheumatic fever and a hard place, was admitted to St. Mary's for scarlatina anginosa on February 22, 1861. The throat was much inflamed and a little ulcerated. On the 2d of March she was ordered ordinary meat diet, but the ingestion of it brought on such severe pain in the epigastrium that it was obliged to be left off.

"What a trivial case this is," the reader may exclaim; "it is surely hardly worth while for the author to print what is a matter of daily routine." That is the very reason why it is cited; it is the daily and the common which are of importance in life, especially in the life of a medical practitioner; his ambition should be to prove of daily and common use. And let it not be supposed that which is happening often is therefore necessarily impressed upon the memory and made fertile by the imagination; "there are," as Coleridge remarks, "some things so true, that they lie bedridden in the dormitory of the soul." To rouse the attention to these is of more real dignity than the exhibition of the strange and rare. I say this in consequence of a remark by a reviewer that some of my cases seemed trivial enough.

It is an example of making the mistake of overhaste in the desire to renew the flesh lost after acute fevers. A good example, because in anginous scarlatina, if in any acute fevers, you would expect, remembering the state of the mouth, the salivary glands to have more particularly suffered. You would expect the indigestion of starch to have been the marked feature. But it was not so, and the deficiency of life manifested was a following of the genus fever, not of the species anginous—the injury to the whole patient took the precedence of the injury to the part.²

On that ground I preserved a record of the case, for often as it must have happened in other instances that my patients have been allowed solid meat too soon, I cannot find another note of the fact.

¹ Case XXXII. in 2d edition.

² The valuable observations of Dr. Fenwick, on the appearance of the stomach after death by scarlatina, explain not only why meat should be undigested during the eruption, but also why during the desquamation digestion should be particularly active. It appears that the pepsin is retained by the accumulation of unshed epithelium in the stomach; but that it is not absent, and when set free, is immediately active. Whereas in typh-fever it is not formed. Hence the slowness of convalescence in the latter disease. See *Medico-Chirurgical Transactions*, vol. xlvii.

And I must trust my memory and my reader's experience to assert that the evil consequences are not confined to scarlatina.

When I say "evil consequences," I do not mean merely the temporary pain, but an attack of feverish indigestion, sometimes of vomiting, which throws the patient back several days.

It is to be remarked that it is not so much the chemical composition as the form of the aliment which renders it improper for incipient convalescents. Through the whole course of a typh-fever under my care a continuous supply of liquid flesh in the shape of beef-tea is kept up. If the stomach cannot digest it the intestines do, and so the patient's strength is sustained. But give the patient a meal of roast beef, and it rolls about in the stomach till it decays; digestion is impossible, and diarrhoea carries off the useless mass.

This caution is most requisite in cases where a relapse is possible. As for example in fever, of either typhus or typhoid type, where the bowels have become inflamed. Here solid meat may bring back the worst features of the disease.

But especially in rheumatic fever there is a painful necessity for restricting the supply of nutriment. If meat be given before the power of fully converting it into living flesh is restored, a semi-conversion into lactic acid takes place. And then a febrile disturbance is produced, which is followed by a return of the rheumatic pains. Or perhaps rheumatic fever really is due to an excess of lactic acid in the blood; and if so the relapse which ensues on the generation of it is readily explicable.

Even when the pains are gone and there is an urgent call for replacing lost flesh, the most suitable diet for supplying it will sometimes bring on their return. The redder and more muscular it is, the more it disagrees, and we must very cautiously get back to "ordinary diet," else a risk is run of losing more by a second attack of the disease than is to be gained by haste. Vegetable matter does not expose patients to the same danger, and thus by dint of rice pudding, porridge, gruel, bread, mashed potatoes, and the like, you may try to satisfy the mouths which often loudly complain of starvation. If we cannot by such arguments succeed in staying the appetite, it is our duty to be cruel, or experience will soon convince us of the hurtful effects of solid meat in causing relapses of rheumatic fever.

I should not omit to give an example of an occasional accom-

paniment of acute indigestion which may easily excite a good deal of alarm, especially when the cause of it is not immediately obvious. I refer to spasmodic cramp of the voluntary muscles. This symptom does not supervene till the pain has lasted several hours.

CASE XVIII.¹—At the end of June, 1866, I was requested by Mr. Paget to see a young man of nineteen, reported to have cholera. The history I found to be this. He had been working hard at inorganic chemistry, to prepare for an examination, torturing the metals and himself with repeated tests, not shrinking from exposure to sulphuretted hydrogen, and, what was still worse, not caring if the laboratory stank of arsenic. Then came the examination. The evening before it he came home tired and anxious, but ate a good dinner, probably with the false appetite of intellectual toil. He went to bed and to sleep, but was awoke before sunrise by a spasmodic pain in the epigastrium, not increased but rather lightened by pressure. As this got worse, he tried to ease it by forcing an action of the bowels, but his success brought no relief to the pain. Breakfast made him somewhat better, and he went to the laboratory. But by eleven o'clock he got so bad that he was driven home and went to bed. In the afternoon cramps came on in the abdominal parietes, and could be alleviated only by the constant rubbing of two sturdy housemaids. These cramps extended from time to time into the legs and arms. The epigastrium was tumid and drummy on percussion. His face was shrunken, pale, and livid, the eyes leaden and anxious, the pulse small and extraordinarily quick (nearly 140 in a minute), the skin cold and clammy. Indeed, I did not wonder at the household calling it cholera. But I was comforted by finding no vomiting or diarrhoea, and by seeing a fair quantity of full-colored urine in the chamber utensil. Towards sundown the pain gradually abated; he had a pulsatious stool, went to sleep, and when I saw him again the next morning was well, though he said his belly was very sore after the cramps. The pulse had sunk to 80.

In whatever parts it may occur, atony, or defect of voluntary and normal action, to which I have ascribed acute indigestion already (see page 28), has a tendency to alternate with involuntary and abnormal action. It is when the legs are tired with over-walking that they are apt to be racked with cramp; it is when the whole body is debilitated and incapable of designed control that it is agitated by chorea.

The atony of purely involuntary parts most generally produces these contractions, not in themselves, but in the neighboring systems of muscles, subservient in most cases to the concatenated acts of the said involuntary parts. Thus, over-distension of the bladder causes stricture in the urethra; overhard and bulky feces bind up the

¹ Case CXXXII. in 2d edition.

sphincter ani. In the same way acute atony of the stomach, or stomach-ache, will sometimes produce cramps of the abdominal parietes, even while it is itself distended and palsied.

In the case above cited, the small doses of sulphuretted hydrogen and arsenic combined with unwonted intellectual effort to poison temporarily the nerves of the stomach, but they were not in sufficient quantities to produce their characteristic toxic effects.

Gout is occasionally, though rarely, liable to prove fatal by attacking the stomach with acute indigestion, inducing common inflammation (gastritis), and so completely arresting the gastric functions necessary to life. Gout in the stomach is much more spoken about by writers of a former age than in our generation; indeed, some of our contemporaries, men even of such large experience as Sir Thomas Watson and Dr. Brinton, seem to have no examples to cite, and imply a doubt of its existence. The following tale suggests that the reason of this is the improved manners of the nineteenth century. We may say so without vanity; no one who studies social history can doubt that our forefathers, well or ill, indulged in brutal and unrestrained gluttony, and it is no great self-condemnation to proclaim our comparative freedom from such like excesses. Certainly a chronic invalid in the upper classes now-a-days, always lives temperately from choice, in the lower from necessity; and it is uncommon to see such mediæval persistence in vice in spite of punishment, as was exhibited by this broken-down debauched patient, though to our great-grandfathers it seems to have been a familiar spectacle.

CASE XIX.—George H—, aged 49, kept a small tobacconist's shop near St. Mary's Hospital, and bore the worst possible moral character for most self-indulgent and excessive dissipation. He had been punished for his habitual excesses by constant attacks of gout for the last twenty years of his life, and his fingers were distorted with the consequences of the disease. In November, 1858, he remarked that he had been free from gout for a longer period than usual, though he does not appear to have merited his exemption by temperance. But at the end of the month he was taken ill with gastric symptoms, and on the 26th was admitted to the wards under my care, with excessive pain and tenderness round the waist, and constant vomiting. He was much prostrated, and fainted in going up stairs to bed. The tongue was brown and dry; The pulse was 124, small and sharp, and empty. The face was pallid, the lips were blanched. He seemed at the point of death, but his mind was quite clear, and his sensibility acute. He rallied a little under alcoholic and ammonia stimulants, but any attempt to swallow more than a few drops allowed to trickle down the

throat, brought on vomiting and hiccough of a most painful character. Then a diarrhœa came on, and he rallied so far as to have a mutton-chop and pepsin ordered for him. But, whether from the effect of the solid food, or an idiopathic relapse, he began vomiting again, the painful hiccough and the excessive tenderness of epigastrium returned, and he died December 12th.

On a *post-mortem* examination there was found, indeed, a vomica in the lungs; but that did not seem to account for the death, inasmuch as it was connected with no symptoms during life. The cause of the sinking evidently was in the stomach, the lining membrane of which was of a bright red color in raw patches, exactly resembling the effect of a corrosive poison on that tissue. Indeed, the memories of those present were immediately recalled to the stomach of a man killed by oxalic acid, whose body had been opened in the same dead-house a few weeks previously.

With this case I will end instances of acute indigestion, for with the immediate effects of poisons, we should be passing into the province of the toxicologists, in whose pages may be found such a full detail of the symptoms and pathological consequences as will amply suffice to enable any one to trace the connection which exists between common poisons and true morbid poisons in their mode of deranging the digestive organs.

Treatment based on Pathological Condition.

The condition is an acute one, whose natural termination is health, if impediments to the free course of nature be removed. The first indication is to spare the weakened organ as much as possible. Complete rest should be secured to it, by administering only liquid food whose absorption requires no action of the gastric glands. Weak beef-tea is the best diet, and rest of limbs best secures rest of the abdomen.

Let alcohol be avoided as a poison: it arrests still further the arrested vitality of the stomach.

Poultices and fomentations to the epigastrium relieve pain and keep the patient on his couch. Mustard poultices and other counter-irritants do harm if there is inflammation, and less good than fomentations if there is not.

Should the complaint be so severe as to risk ending in inflammation of the stomach (of which the symptoms are shown in Case XIX.), leeches may be applied, but they are hurtful in ordinary cases.

Emetics are wanted only when completely insoluble vegetable

fibre is the cause of the disease. The mildest are the best, warm mustard and water.

The natural termination of indigestion in diarrhœa is an argument for the use of purgatives; but they should be mild, otherwise they hurry the augmented secretions through the intestines with a deal of griping, and yet leave the undigested matters behind. The most eligible form is that of enema with a little mustard in it.

In children, purgatives are apt to bring on a continuance of diarrhœa, if given for stomach-ache, and they also gripe a good deal. If necessary, let gruel enemata be given.

In the acute indigestion of infants, minute attention should be paid to the quality of the milk. If the suckling mother or wet-nurse should be menstruating, have recently resumed matrimonial intercourse, or had any mental excitement, the milk too readily sours. The child should have it from a bottle, with a teaspoonful of liquor calcis to the teacup. The same addition may be made to cow's milk, if the child is fed on that. If there is diarrhœa, a teaspoonful of water arrowroot alternately with the liquor calcis.

CHRONIC INDIGESTION.

The indigestion which I have described as acute, will be observed to have arisen from temporary passing causes, in a body capable of renewing itself, unaided or aided, to complete health. It is important to distinguish from this the chronic, where the disease instead of returning, by a series of idiopathic stages, to the point started from, progresses from bad to worse, and, the longer it lasts, is less likely to be recovered from without assistance from without. This may happen, either by reason of the patient being so imperfect in power of resistance to noxious influences as to be unable to cast them off, or in influences themselves being continuously renewed. The imperfection may be due either to prevenient pathological conditions, or to the violence of the lesion which itself originates the indigestion; the renewal of the influences may hang on circumstances internal or external to the body. Thus it will be seen that the essential classification of indigestion is among chronic diseases, that it becomes acute solely by the resistance of the body to it and by the consequent expulsion of its cause. Its tendency is to go on from bad to worse, unless some contrary condition is originated, either by the body itself, or by foreign forces.

I have said this to show in what sense I have called indigestion

acute. The acuteness is in the patient, not in the disease; and our efforts of aid are of most use when they elicit that acuteness. We best accomplish our purpose, when we bring the body into the state in which it makes the attack an acute one. This can only be done by positive medical interference, and not by *la médecine expectante*, which, avowed or disguised, is so common a refuge of ignorance in the present age. "*Rusticus expectat dum defluat amnis*," and not the true philosopher.

Under "*la médecine expectante*," I would class the practice of "infinitesimals." I suppose a good third of the private patients, who come to me with dyspeptic ailments, have tried this system, and confessedly tried it without profit; though some of the same people still continue to think that in acute fevers, in scarlatina, coryza, measles, pneumonia, and the like, their convalescence is brought about by doses incapable of appreciation by the senses.

Let us take as an illustration one of the simplest of all forms of deficient vitality, the consequence of an imperfect supply of that which vitality most requires for its manifestation, albuminoid food and pleasurable emotion. How familiar to the hospital physician is such a case as the following, upon which I fall on turning over only a very few leaves of my St. Mary's note-book!

CASE XX.¹—Caroline P—, aged 49, a musician's widow, who formerly with her husband earned an easy subsistence by her profession, had been for a year living (as she called it) on needlework, and looking on life with despair. On her admission to St. Mary's in April, 1860, she is described as a long-faced cachectic woman with sharp features, thin lips, and hair still brown. Her complaint was of pain and an intolerable feeling of weight at the epigastrium coming on an hour after eating, flatulence² either breaking off from the mouth or afterwards distending the abdomen. So that she almost dreaded to take food. But what was this food? Bread, potatoes, tea, sometimes a bit of bacon, hardly ever a bit of meat. However, she had got not to care, eating at all was so distasteful to her. When ordered two meals of fresh meat daily, she could not indeed at first relish it without half a glass of port wine to wash it down. But that dis-relish soon passed away. In a fortnight she had recovered her appetite, and moreover, was able to take even vegetable food. In another week she was well enough to leave the hospital.

¹ Case I. in 2d edition.

² By "flatulence" I mean a superabundant collection of gas in the alimentary canal, whether it pass away upwards or downwards, or remain in the abdomen.

Gastric juice is required to aid the digestion of starch by dissolving the albuminous envelope of the granules: gastric juice is a highly animalized fluid; to make it animalized, fresh blood is a *sine quâ non*: and the material of which that is quickest made is meat food. Such is the rationale of these cases, so eminently satisfactory to the administrator of public funds, for however small he may think the power which science gives him (and the best men know best how small it is), he feels that the application of it has rescued a fellow-man from the grave.

There are many such cases where by removing the cause the disease ceases, that is by supplying what is deficient the deficiency is at an end, and where drugs consequently are not required; but perhaps more frequently, especially in the upper classes, there are symptoms which call for their employment.

Where the starvation and consequent anæmia fall by accident on a patient less acclimatized by gradual grinding inevitable poverty to them, they produce symptoms not probably more fatal, but more marked and more painful to the sufferer. For the nervous system retains its sensitiveness—its instinctive courage, as it were—and complains loudly of the partial death forced upon it. Here is an example, illustrative of a more sensitive indigestion also following inanition.

CASE XXI.¹—Mr. V—, aged 50, a periodical writer, usually well paid and usually healthy, from loss of employment during the spring and summer of 1866, was reduced to great straits, and for long periods at a time had barely enough food to keep body and soul together. After a time he ceased to feel hunger, and the principal warning he had of starvation was the feeling of an extraordinary lack of muscular power. He did not perceive his intellectual energies flag at all. After he got into luck again he found it impossible to take advantage of the plenty poured around him. Eating anything was followed in ten minutes or a quarter of an hour by intense pain in the epigastrium extending downwards over the hypogastric region. The sensation was “as if the navel were gripped with an iron hand.” The mildest liquids, such as tea, brought on this agony quite as much as the most insoluble viands or the strongest stimulants. He was much troubled with flatulence after vegetables. Meat did not induce so much, but its ingestion was followed almost immediately by the intense pain at the epigastrium. If he could bear this, he digested it pretty completely. Then he noticed how emaciated he grew, so that the balance testified to a loss of two stone of flesh. He was not conscious of

¹ Case II. in 2d edition.

this during the starvation. Now, too, he became sensible of a failure of mental power, especially in the hours when the flatulence oppressed him most. When I saw him in October, he presented a pitiable aspect of distress and emaciation; his abdominal pain was growing worse and worse, his urine was of extremely low specific gravity (I have lost the note of the exact figure).

I prescribed for him a draught of hydrocyanic acid with Battley's sedative liquor (four minims of the first and five of the second), to be taken a few minutes before each of the daily meals. In three weeks' time he came again to report favorable progress. He had gained flesh, lost his pain in a great measure, and was able to take a meal often even without the aid of the draught. But he still had some degree of gaseous distension of the abdomen, cognizable by the hand and eye; still his brain was not so clear for work as could be wished. I then prescribed a mixture containing two grains of quinine, $\frac{1}{20}$ of a grain of strychnine, three minims of hydrocyanic acid, and a grain and a half of iodide of potassium, to be taken twice a day, under the use of which he got quite strong again.

Observe here how the digestion of vegetables was *slow and defective*, while that of meat was only *painful*. The meat was digested, or there would have been nauseous eructations from its decomposition, but the stomach was unnaturally sensitive of its presence, even for the necessary time of its stay in the upper part of the alimentary canal. To the patient's cure meat was a needful medicine, and therefore the first thing to be done towards the cure, was artificially and by drugs to stay this inconvenient pain. To have stayed the pain without supplying the meat would have been merely palliative or allopathic treatment; to make the anæsthesia a stepping-stone to the formation of gastric juice out of albuminous food was strictly restorative.

A second step was the administration of quinine, whose action is to brace up the mucous membrane of the mouth, œsophagus and stomach, to restrain the formation of mucus on the surface, and so to allow of the free secretion of the special digestive juices. Strychnine powerfully aids this effect by increasing peristaltic movement. Iodide of potassium was given with a view of somewhat aiding the digestion of starch by increasing the activity of the salivary glands.

All these are but introductory to the throwing in of the true cure, an ample flesh diet.

It will be clearly recognized that in the first case above cited, the disease was chronic and enduring, because the external cause that excited it was chronic and enduring. In the second, the condition of tissue must have been altered for the disease to remain

after the cause was removed. The actual alteration of tissue I believe usually to be at first a paralysis of the local nerves, because it is found so often as a consequence especially of such causes as immediately affect the nervous system. Actual paralysis of the external voluntary muscles, if occasioned by a non-central cause, will usually be accompanied by indigestion as a feature; as—

CASE XXII.¹—James L—, bricklayer, aged 32, was admitted to St. Mary's under my care in August, 1857, principally for a loss of power and of sensibility in the legs, due to some extraordinary exertion six weeks previously. Besides this, he complained of pain at the epigastrium, not increased by pressure, but only by taking food. His tongue was dryish and white, his pulse feeble. When this was observed, potatoes were omitted from his dietary, which had previously contained them, and the discomfort ceased. He afterwards had quinine and full meat diet, with an extra allowance of bread to take the place of potatoes, and remained in hospital altogether three weeks, without any return of the epigastric pain.

Potatoes, as usually cooked, are probably the most objectionable article of food which can be presented to a weak digestion. The starch granules are but half ruptured, and are held together by cellular tissue, so that they are reduced by mastication only into small pellets, which require long soaking in gastric juice before they can be broken up² sufficiently for solution. Their indigestion therefore does not show any annihilation of gastric power, but merely its debility.

The stomach may also be brought into a chronic condition of disease by a single violent bodily exertion.

CASE XXIII.³—William S—, aged 37, came to me August 1, 1861. He said that ten years before he had exerted himself violently at Epsom on the Derby-day at hallooing and running. He was suddenly attacked with a severe stitch in the side and excessive flatulence. He vomited, and the pain was stayed; not, however, the full effect of the indiscretion; for before that period his digestion had always been perfectly strong, but ever since he has suffered from eructations of tasteless air from the stomach, within an hour after meals. Recently, after any mental annoyance, he had had attacks of vomiting. His general health, too, had become affected; his muscles were flabby and tremulous, like those of a spirit-drinker, and

¹ Case VIII. in 2d edition.

² Mashing them expedites this process very much, but even then a good deal escapes digestion. Mixing them when mashed with meat gravy is a further expedient which is also useful.

³ Case XIII. in 2d edition.

his temper had grown irritable. There was no pain on pressing the epigastrium. The appetite was moderate, and the evacuation of the bowels was daily. After taking iron for a fortnight, his nervous symptoms were much amended, but he complained of the flatulence, and the bowels were costive. He was ordered quinine with strychnine, and pills of aloes and myrrh, which seemed to suit him well, for I find no note of any future change of medicine.

As these cases are not fatal except by the supervention of other diseases, it is impossible to have anatomical proof of what structural change takes place in the organ primarily affected. But it can hardly be chronic inflammation, ulcer, or thickening; or else pain on pressure, either sharp or dull would be found. It is more reasonably guessed to be a sort of dilative paralysis, such as occurs from sudden unwonted stretching of hollow organs, like the bladder, for example, from forcible retention of urine.

This has been the first mention made of the use of aloes as a medicine, and I will therefore spend a few paragraphs upon it. Be it understood that I do not order the aloes and myrrh pill merely as a purgative, nor let it be supposed that any other purgative would do as well. On the contrary, most purgatives would probably have been injurious. Gamboge, senna, sulphate of magnesia, colocynth, mercury, and several others which produce elimination of serum and increase secretion generally, do harm just in proportion to their activity. It seems established, by the experiment of making them act when injected in a fluid form into the circulation, that their soluble principles have a destructive agency upon the blood; whereas the soluble alkaloid in aloes (aloin) is a bitter tonic, and the purgative power resides in its insoluble resin. It is very moderately eliminative—in small doses it but adds to the solid excreta of the colonic glands, and elicits matter feculent in smell and of consistent form—whilst at the same time it strongly restrains by its bracing bitter the formation of mucus. See its effect on moist piles, how it dries them up and makes them smart! And we may judge from this what its action on the gastro-intestinal mucous membrane is. At the same time, by the more vigorous peristaltic movement and by the solid mass passed along the gut, the already existing mucous is cleared away. Its work is directly to restore nervous activity in the alimentary canal. It is joined with myrrh, partly to divide it minutely and make a small dose go further, and partly to give the patient the benefit of the extra resin.

I am particular in enlarging upon this point from a fear lest any

words of mine should be construed as an encouragement to an unfortunate tendency, common to both the public and our profession, towards commencing treatment habitually with destructive remedies. Some call this "clearing the decks for action;" in a majority of instances they may be said to throw overboard much of the best tackling in the ship and loosen her armor-plates. A so-called "sluggishness of the liver" is a frequent pretext. In a half-nourished person (and all invalids are *ex vi termini* but half-nourished) the feces are apt to be light-colored and scanty, inasmuch as the blood they come from is light-colored and scanty. Blue pill gives them immediately a darker hue and increases their quantity, but sadly at the cost of the patient's strength, while the temporary change soon passes off. But let the experimenter try meat and iron, and see if they cannot produce the same result.

He will quickly be convinced that they can; and he may have the satisfaction of thinking that such result is real instead of fallacious, permanent instead of temporary; for it arises from the secreting viscera having more available waste tissue to dispose of, which has been replaced by new—the old stones pushed out by new stones added to the well—and not from their being driven artificially to appropriate the required elements of the tissues.

Or the paralyzing influence on the stomach may be a sudden mental shock, an influence very similar in its action on the nerves to a violent bodily effort.

CASE XXIV.¹—Edward F—, a man of 40, had had dysentery in 1852, but had been fairly strong again till a few months before he came to me early in May, 1860, when the sudden announcement of the failure of a bank completely upset him. He began to suffer from a feeling of weight at the epigastrium, and of palpitation of the heart after dinner, which, however, would be relieved by eructation. He had nocturnal flatulence, he lost his marital vigor, and grew thin. His nose too had got red, which a man of 40 still careful of his appearance does not like. I saw him again twice in June, by which date some powders of strychnia and pepsin, which I ordered him, and time, seemed to have been effectual in setting his digestion right, and he was able to gratify a wish to travel on the continent.

The mental strain may have been (and indeed generally is) of a wearing character, rather than a sudden shock, with the same result.

CASE XXV.²—John C—, aged 55 (Dec. 2, 1862), had been slowly becoming poorer and poorer for some years, though in point of fact

¹ Case XV. in 2d edition.

² Case XVI. in 2d edition.

he was safe from physical want. He was also unhappy at home through the misconduct of a wife. During this time he first began to suffer habitually from oppression at the epigastrium after meals, so as to grow particular in his diet, and from experience to eschew potatoes. After food he felt something "working up and down" as if flatus was trying to come up. He had grown emaciated, and lost as much as thirty pounds in weight, and his fecal evacuations were scanty and irregular.

How common is the influence of overstrained intellectual effort in producing indigestion, an influence especially paralyzing to the involuntary nerves. Perhaps to that more often than to any other cause the history may be traced in the classes of society placed above the chance of physical want, and such cases as the following will recall hundreds similar in the practice of all medical men. I suppose they will become more and more common, as society becomes more complicated, and the demand for brain work in the servants of society more pressing.

CASE XXVI.¹—My old patient T—, an anxious lawyer aged between 30 and 40, with a young family, complains that whenever he has to see a worrying client (and clients seem to become more worrying than they used to be), his mouth gets dry, his hands and feet get cold, his eyeballs burn, his head gets in a whirl. He goes home to dinner with a pain in his loins, but with a good appetite. His food lies like lead on his stomach, and seems to produce an intense headache. Once in bed, he drops to sleep; but he is woke up, at four in the morning at the latest, by either cructations or wind in the bowels. If this can be passed off he feels somewhat better, and can go to sleep again. I persuaded him to give up his house in London and sleep in the country, which seemed for some time almost to make him a new man, but he still suffers in some degree from his weakness of nervous power, whenever he has any but the most routine business to do, and has at last given up his profession altogether with complete relief.

Remark the sequence of events: the mind occupies the whole business of the brain; no nervous energy is left to preside over the secretions; the mouth is dry from lack of saliva, and if we could see them we should probably find the œsophagus and stomach dry also; the amylaceous food is not converted; it lies like a weight at the epigastrium till it undergoes a chemical instead of an organic solution; it ferments, and gives out carbonic acid. In the mean time the tired brain is causing headache, and laying

¹ Case XIV. in 2d edition.

the blame of its pains on the stomach; whereas its own weakness was the cause of all the troubles.

It is a wasteful expenditure of life for a professional man to allow sympathy with his clients to engage his mind during the hours of relaxation. He becomes a worse lawyer or doctor by so doing. He may give them indeed the sympathy they ask for, but he renders himself, by over-caring, less capable of giving the intellectual effort which their cases require. Business thoughts should be thrown off with business hours.

Where complete rest can be gained along with its administration, strychnine is often of great use in alleviating this flatulence from brain-fag. But where the patient goes on, still over-exerting his mind while taking that drug, it produces a painful irritability of muscle and mind after each dose which prevents its continuance. I gave it with that result in the above case. Charcoal brings temporary relief, but it is a bulky, troublesome, gritty powder, and in chronic cases a man cannot go on forever taking it. Occasional courses of quinine and occasional courses of mild alkalies seem of most use. Alkalies, fresh air, and rest, may all be obtained together by a visit to Vichy or Vals, or some equivalent spa.

Child-bearing is not to be called an intellectual or moral effort, but neither, on the other hand, is it solely a corporeal strain. It appears as a cause of indigestion in the following case:—

CASE XXVII.¹—The immediate cause of M. A. S.— coming under my care on January 23, 1855, was an attack of cramp-like pain after a meal at which she had eaten both rice and potatoes. But I found that she had suffered after vegetable food for many months, and that this weakness was traced by her to her last child-labor, up to which time she had always been strong. Her stomach was so blown out by the immediate illness, and so painful for several days, that I had to put on some leeches and feed her on milk and lime-water, but I doubt not that a lesser degree of the same condition was habitual to her. She seemed to have been flatulent and to have had costive bowels *ever since the birth of her last child.*

Doubtless the production of indigestion after acute illnesses is most frequent where those illnesses have specially affected the alimentary canal. Yet we find it follow also other serious diseases, though quite unconnected with that mucous membrane. Thus—

¹ Case XXII. in 2d edition.

CASE XXVIII.¹—Harriet R—, a pale, single woman, aged 42, was ill enough to be admitted an in-patient at Saint Mary's, July 12, 1862, a time of year when slight cases are usually kept out. She complained of pain at the epigastrium so severe that she took hardly any solid food, living mostly on tea. The mouth was dry and sticky, her appetite was gone, the urine was of the specific gravity of only 1.010 and scarcely acid, the pulse 108, quick and small, the catamenia had become irregular and almost ceased. The state of innutrition she attributed to a rheumatic fever a year before, since which time she had experienced this pain at the epigastrium, caused by the amylaceous food which only she could get. She, however, digested well milk and lime-water, and in a week was eating "ordinary diet."

In the last instances quoted there was no previous state of the internal viscera which could be suspected of having determined the weakness to the stomach. But this is rather the exception than the rule. Mental causes are much more powerful when joined to some previous pathological condition.

CASE XXIX.²—Mrs. B—, aged 66, placed herself under my care in July, 1861. She had had bronchial catarrh with frothy sputa for several winters, but had suffered little from her stomach. In the early part of the year she had been nursing a son-in-law, a patient of mine, with pulmonary vomica, and had naturally experienced much anxiety on his account. This was followed by pain in the right hypochondrium and a sensation of cramp in the stomach when it was empty. Vegetable food produced flatulence and was avoided. Apparently in consequence of that, the bowels had become costive. She also occasionally suffered from water-brash.

Is it not fair to assume that the catarrhal condition which had affected the pulmonary, travelled to the gastric mucous membrane? that the patient, in fact, had a catarrhal diathesis, which, by the slowness of digestion resulting from the mental worry, was fixed in the stomach? So that the dyspepsia remained though the external cause of anxiety was removed.

The chief mode in which chronic catarrh induces dyspepsia, I believe to be by enveloping the food and impeding the gastric juice from freely mixing with it in the stomach; thus the starch, which had escaped the mixture with saliva by being unbroken, remains still undissolved. The mucus further on in the ileum and in the colon, by its slipperiness and elasticity, prevents the muscles of the gut from duly urging forwards the mass. Hence, we have the starch fermenting and generating gases and morbid acids, relieving pain, indeed, for a certain period after it is swallowed, but

¹ Case XXI. in 2d edition.

² Case XVII. in 2d edition.

by the above-mentioned chemical decay producing infinite distress in the later periods of digestion, failing to afford nutriment in the intestines, and causing costiveness when it gets lower down, making the feces lumpy, slimy, and hard.

I believe it is this connection between the mucous membrane of the lungs and of the stomach, which is the main agent in producing what is called phthisical dyspepsia, a very obstinate form of derangement of the digestive viscera.

Sometimes the condition which originates the indigestion may be an organic and incurable degeneration, and yet in spite of the persistency of the cause, the indigestion may receive relief from art.

For example, disease of the circulation produces sometimes a very marked indigestion, which is not palliated either by remedies directly addressed to the heart, nor by those directly addressed to the stomach. It appears to me, that in these cases, a diminished vitality in the arteries, which include, of course, those supplying the abdominal viscera, lies at the root of the evil.

CASE XXX.¹—Mr. James L—, aged 63, came under my care, March 11, 1867. He had for a year past been growing very wheezy and short-winded, and had been under various medical treatment without any advantage that he could trace. On examination of the heart, it exhibited a tumbling action; its stroke was uneven and irregularly intermittent; the sounds were distant and not accompanied by morbid murmur. The pulse at the wrist was more irregular and intermittent than the heart. The urine was albuminous, of the spec. grav. 1.008 when warm from the bladder, and was free from tube-casts after standing.

For the last few weeks he had been unable to sleep at night, suffering much from flatulence. This did not arise from over-loading the stomach, for his appetite was gone. The skin had become yellower than usual, indeed the yellowness of his complexion was visible through the fixed russet-apple tint of hearty old age, which appeared in his cheeks. I prescribed two grains of aloës and myrrh pill every night, and two tablespoonfuls twice a day of the following mixture:—

R.—Ferri et Quiniae Citratis, gr. 40.

Tincturæ Digitalis, $\frac{1}{2}$ fl. oz.

Ætheris, $\frac{1}{2}$ fl. oz.

Aquæ, fl. oz. 15.

On the 19th, he said he was twice the man he was in both breath and bowels. And, indeed, he looked so, for the skin was clearer, his appetite and sleep were better, and the pulse was nearly regular. The urine was 1.015 in spec. grav., but still albuminous. So that all

¹ Case VII. in 2d edition.

improvement was traceable to the circulating organs, not to the kidneys.

I saw him again twice at the end of July. He had been away from home and been much better than for a long time, and had not had a relapse of his stomach ailment till a few days previously. I again put him upon iron and digitalis.

The amelioration in this case seemed due to the tonic action of the digitalis on the arteries, combined with the reddening of the blood by iron. Of course, neither heart nor arteries were cured, both were in a pathological condition, incapable of restoration; it is, therefore, satisfactory to know that we need not in such instances despair of being of use to the patient; a slight palliation of the irremediable defect removed the chief subject of complaint.

Bright's disease of the kidney alone without affection of the heart, has a well-known symptom dependent on arrest of the digestive function. The most common form is exhibited in the following extract from St. Mary's clinical note book.

CASE XXXI.¹—Frances S—, aged 63, a superannuated governess, was admitted June 7, 1861, with general dropsy of three weeks' duration, dependent on albuminuria. She had for some time suffered a good deal from flatus, occurring soon after meals, and followed by vomiting of the ingesta. When, for a few days from time to time, the victuals were retained, griping and diarrhœa were often the consequence.

In these sort of cases it is to be observed that the symptoms are very severe, not confined to amylaceous food, and producing the phenomenon of vomiting; or if vomiting fails to be produced, diarrhœa often takes its place.

But at other times you find examples of a less severe degree of dyspepsia, vegetables alone bring indigestion, while various kinds of animal food are well borne. One can hardly suppose that the coexistence of diseased heart can be the cause of the complaint being less severe in such as the following:—

CASE XXXII.²—Maria R—, aged 52, had suffered for four winters from cough and shortness of breath, which went away when the weather became mild. Her appetite was generally good, and she did not suffer from indigestion. In the spring of 1861, as she got better from her winter attacks, she found she could not get about from swelling of the legs. This anasarca grew worse, she got ascites as

¹ Case VI. in 2d edition.

² Case V. in 2d edition.

well, and came into St. Mary's. The urine was found to be albuminous. It was not till she had been in the ward above a week that she complained of bad nights from flatulence, and a sensation of fullness in the epigastrium, which shortly after dinner became pain. Hydrocyanic acid and soda did not relieve this, but the change from ordinary diet to fish without potatoes did so immediately. The patient remained in the hospital more than three months, for abscesses and sloughs formed in the cellular tissue of her legs from distension, and she was a long time on a water-bed. She finally got well enough of the dropsy to be discharged, but never was able to digest well, though no more severe symptoms were produced than those detailed.

But the production of indigestion by other diseases is most common, where these diseases especially affect the alimentary canal. Thus cholera will often leave behind it a state of mucous membrane which keeps up the inability to digest food. At the latter end of the epidemic of 1854, when the plague was becoming more general but less fatal, I used to see a good many such cases as the following:—

CASE XXXIII.¹—Joseph W—, aged 42, a laborer, had an attack of the prevailing diarrhœa in August. From that time till he came to St. Mary's on October 27, though his appetite was good, his bowels had never recovered their healthy action, being always either costive or relaxed. Lumps of undigested vegetable food used to appear in the feces. For the last three weeks also he had suffered from pyrosis. The tongue was large, flabby, and redder than natural, as if skinned. The epigastrium was tumid and drummy. The kidneys seemed quite to have recovered from the choleraic congestion, for the urine was acid, clear, and free from albumen, though (as in most dyspeptics) of low specific gravity, 1.016. He was treated with rest in bed, liquid animal food, bismuth, warm baths, and castor oil. And the treatment seems to have suited, for he was discharged "cured" (which means in hospital language "well enough to go to work") on November 1. But I presume some symptoms remained, for he was ordered to take a store of bismuth with him.

This is an instance of the partial paralysis of the vital powers of the digestive organs which often succeeded to choleraic diarrhœa—I think more often in moderately mild cases than in the most severe. I suppose because they got about too soon; just as dropsy oftener occurs after slighter scarlet fevers than after dangerous attacks.

It is wrong to class such cases as inflammation of the stomach and bowels, for there are none of the usual accompaniments of inflammation, such as heat of skin, quick pulse, thirst, or even loss

¹ Case XVIII. in 2d edition.

of appetite. So that unless the word inflammation is to be made coextensive with disease, it cannot include them.

A return to the district infected by the cholera poison will be apt to cause a relapse in those who have got rid of their diarrhœa by temporary removal, as happened in the following incident of the visitation, which now in trembling hope we call "the *late* epidemic."

CASE XXXIV.¹—Mr. V—, aged 35, a chemist and druggist at the East end of London, came to me on the 13th of October, 1866. During the prevalence of the epidemic in the early summer months he had experienced an attack of choleraic diarrhœa, with cramps, &c. On his recovery he was too weak to attend to business, so he left London for a six weeks' holiday, and then felt quite well. On returning to his work, he was careful not to over-exert himself; but still he had no sooner begun to sleep in the house than his rest was disturbed by flatulence and diarrhœa; this morbid looseness of bowels often alternating with costiveness, giddiness, and confusion of ideas. The feces, instead of being formed, homogeneous, and of natural odor, as in the country, contained large lumps of unaltered food, and smelt like rotten flesh. A second absence from home relieved in a few days these symptoms, and again a return brought them back. A third holiday was again effectual, and now in October he was very anxious to get back to work; but still he has a slight threatening of the indigestion of food in the stomach, indicated by loss of appetite and flatulence. My prescription was, a careful abstinence from purgatives, and a draught containing two grains of quinine and one-twentieth of strychnia twice a day, which appears to have been at last effectual.

It would seem that the external cause of cholera, whatever its nature or seat may be, remains behind still active, after all those most prominently sensitive to it have been affected, and that it is still poisonous, though in a minor degree. The impression I receive from the facts we possess is, that there is actually a poisonous material very generally diffused during epidemics, and occasionally generated also sporadically at other times; and that most of us very frequently digest it, assimilate it, or otherwise destroy it, as we may do other poisons or drugs, without injury, or with very slight injury. Like a tapeworm's brood, only a small fraction of what is generated finds a suitable home.

But that is no argument in favor of the evacuant treatment. We have no evidence that the poison, conjectured to exist, and to be

¹ Case XIX. in 2d edition.

of a purgative nature, remains in the body during the continuance of its effects. No one takes for granted that a bullet which has injured a rib is still to be extracted—he turns his attention to curing the wound. To treat cholera by purgatives seems to me like probing for the said bullet after it has gone through the body, or perhaps rather hoping to counteract an overdose of elaterium by an overdose of colocynth. Probably the minor purgative does not increase the risk in severe cases, for it is carried off safely by the major purgative, but I do not see how its use can be justified by rational physiology.

It is on these grounds that I advise an absence from purgatives in such cases as last related, and I believe that the indigestion following choleraic diarrhœa, as well as the diarrhœa itself, is very much kept up by the habitual taking of purgatives, a subject to which I shall recur in a future chapter.

In acute diseases the condition of the stomach which prevents it from digesting meat, of which an example is given in Case XVII., is usually acute, and all that is requisite is patience. But where the failure of the organ becomes chronic the affair is much more serious. A state of anæmia is induced which is a long time in being recovered from.

CASE XXXV.¹—Emma Ch—, aged 17, was admitted into St. Mary's, December 21, 1855, in such an extreme state of weakness that she was obliged to be kept in bed. The pulse was 112, there was a systolic bruit with the first sound of the heart; the breathing was very short on slight exertion, the catamenia had ceased, and the complexion had become clear and pale like wax. She complained of extreme lassitude and headache. The bowels were irregular, reported costive on admission, but affected by diarrhœa during the second day of admission after taking broth with meat in it. It appeared that she always avoided meat, that she was disgusted at the sight of it, and that it caused pain in the epigastrium. There was also a painful spot on the dorsum of the tongue, impeding deglutition of solid meat, and this spot and others near it were denuded of epithelium so as to give a marbled aspect to the part. For this reason she had lived on vegetables, gruel, bread and tea. A gradual return to a meat diet through beef-tea, eggs beaten up in wine, and cocoa at short intervals, aided by absolute rest, borax, iron, and chalk, restored her so by January 10th that she was able to get up and dress. Her pulse was 80, and firmer, the systolic bruit was not nearly so loud as at first, and she had some color in her cheeks. On the 12th she was able to eat the mixed "ordinary diet" of the hospital. On the 15th she wanted to

¹ Case XXXIII. in 2d edition.

discharge herself from my care; but when she lay down, I found the systolic bruit was still audible; so I kept her in for a little longer rest, on the excuse of having her vaccinated. She left hospital early in February.

It is a hard task for a growing girl's stomach to make red blood without meat, and the longer she goes without, the less able is she to digest it; the power of the gastric juice is lowered by the abstinence.

As to the organic cause of the complaint in this instance, I presume one may be allowed to judge of the unseen by the seen, and to conjecture that the state submitted to our sight in the most conveniently visible portion of the alimentary tissue (the tongue) was also present lower down. And we may rationally suppose it to have been even worse lower down, for the special gastric functions were defective, while the special oral functions remained unaffected. This superficial aphthous state, where the epithelium is destroyed instead of being raised into blisters, is common in the throat, tonsils, and os uteri, and may by stimulating applications have the edges so raised and the centre so depressed as to look exactly like ulceration. Borax and quinine soon cure it, and are therefore probably equally good for the stomach under the same circumstances.

Sometimes the arrest of the function of the gastric glands arises out of their destruction by an agency which destroys at the same time the sensitive nerves, and thus we may have an entire absence of the symptom pain, while the loss of gastric power is evidenced principally by anorexia, especially for animal food. In the following instance there was more general destruction of the gastric glands than usually happens in cancer, by reason of the more superficial distribution of the growth, and so there was more loss of appetite for the food which the gastric glands demand than this dim localization of malignant disease exhibits in ordinary cases. In cancer of the stomach generally, there is left untouched plenty of gastric gland to carry on digestion, if it were not for the vomiting.

CASE XXXVI.—J. C. W—, aged 68, a hale man of his age, in spite of a long residence in the tropics, came to me March 29th, 1866, complaining of a complete anorexia for meat. He did not indeed vomit that which to satisfy his wife he had forced down, but it excited intolerable disgust and sometimes diarrhœa and fetid flatulence. On careful examination of the epigastrium, it was a little drummy, but

there was no tumor, nor was there any pain on pressure. He denied having any other morbid symptoms. Some weeks afterwards vomiting supervened, and he died of emaciation, without pain ever being a marked symptom. On dissection by Mr. MacNabb, of Epping, there was found malignant thickening of the coats of the stomach from the pylorus (which was not contracted), to the inner edge of the œsophagus. On the outside of the great curvature there were many pea-sized gelatinous tumors, and where these were thickest, there was ulceration of the corresponding mucous surface.

In some cases of pulmonary consumption, as before stated, we find the stomach affected with indigestion. It is so easy to trace out a physiological chain of causation from diminished diet, to atrophy, deposit of tubercle and phthisis, that it is commonly too readily assumed that such is the invariable course of events. I do not think so. It seems to me that in most cases the condition of mucous membrane induced in the lung by the presence of tubercle is communicated to the stomach, and that the disease of the latter is in fact an effect, not a cause. Though still it is a most serious effect, which reacts upon and aggravates the pulmonary injury. This is a practical point, for if it is an effect we may have more hopes of curing it, and so arresting the galloping consumption which is so imminent.

CASE XXXVII.¹—George C—, aged 24, came under my care at St. Mary's, October 19, 1855. He was much emaciated, and had occasionally expectorated bloody streaks in the mucus from his bronchi. He had also slight hectic, and profuse nocturnal perspirations. On examination bronchial breathing with sibilant râles was found in the upper part of the thorax on the right side, and that part also was flatter than the corresponding part on the other side. During the last two or three months he had experienced pain during digestion. He had pain in the epigastrium and occasional diarrhœa alternating with constipation. After eating there was a feeling of weight at the pit of the stomach. This was especially noticed after animal food. Milk even caused it if taken without bread.

He got a good deal better on rest, quinine, and iron, and was able to take a mutton-chop. But what seemed to do him most good was cod-liver oil, by use of which he improved in spirits, in power of taking meat, and in weight. He increased as much as ten pounds avoirdupois between October 29th and November 7th, and was discharged as well on the 9th.

The deficient digestion of animal food in phthisis is a very serious thing. It keeps the patient in such a weak state that fatal effects follow shocks which could otherwise be borne up against.

¹ Case XXXIV. in 2d edition.

CASE XXXVIII.¹—Thomas H—, aged 25, a tobacco-pipe maker, was admitted to St. Mary's September 15th, 1852, having suffered from hæmoptysis, cough, and other phthysical symptoms for sixteen months, during which time he had been out-patient to the Brompton and other hospitals. There appeared to be crude tubercles to a moderate amount at the apices of both lungs. He complained of a feeling of coldness at the epigastrium, which increased to pain after meals when they consisted of meat. He had also frequent vomiting; even the broth diet of the hospital brought it on. Hydrocyanic acid checked it a little, and bismuth also seemed to deaden the pain in the epigastrium, so that he gained a pound or so in weight, in spite of what we thought was a softening of the tubercles under the left clavicle. He was able to digest fish with less pain than meat.

During this time his father was ill at home with the same complaint as our patient, and on October 13th, he had news of his death. He was much affected, but the special symptoms did not seem aggravated, and he left the ward for home at his own desire next morning. Two days afterwards he died quite suddenly; and the immediate cause of decease was reported by his friends to have been grief at the loss of his father.

In this case it is to be observed that vomiting was present, which is a grave symptom. Its connection with phthisis shall be discussed in connection with the cases quoted in a future part of this volume to be devoted to that subject.

On the other hand, I am free to grant that in some cases, especially in children, marked indigestion precedes the formation of tubercle. It is called often "strumous" or "rickety" dyspepsia, because it leads to struma and rickets. Cases are common enough among the ignorant and the poor. The following includes as many of the ordinary typical symptoms, and as few individual peculiarities as any I could select.

CASE XXXIX.²—James A—, aged 7, admitted to St. Mary's, August 9th, 1856, had an angular countenance of grave expression, with gray eyes and long fringed eyelashes. The veins of the eyelids and temples were large and conspicuous. The arms and legs were very attenuated, in strange contrast with the swelled and drummy, but flaccid, belly, on which also the parietal veins were enlarged. The skin of the limbs was dry and unrenewed, giving them a dirty look. In bed he was restless, picking his nose, rubbing his anus, fidgeting his head about, kicking off the clothes, and getting into all sorts of odd postures; but when dressed he was preternaturally grave and quiet, and cried when he was roughly touched by any one. He ground his teeth and perspired profusely when asleep.

Though so thin, he was said to have a ravenous appetite. His

¹ Case XXXV. in 2d edition.

² Case XLIV. in edition.

tongue was pinkish with white spots; he was thirsty. His stools were copious, pale colored, as if entirely deficient in bile; with inky stains in parts, as if iron had been taken, which, however, was denied. There were no worms in them, though the presence of these parasites had been reported. Their smell was very nauseous, resembling that of the macerating tub of a dissecting-room.

During a fortnight that he was in hospital, the stools became natural under the use of purgatives, iron, and meat; and in close ratio to the improvement of the stools, was the patient's increase of flesh.

Examination by the microscope of stools like these shows them to contain lumps of unaffected muscular fibre, undissolved fat and free oil-globules in great quantity. In such quantity, indeed, that their whitish color might really be due to the emulsioned oil. Fat is here taken down—truly “down” to chemical decay; but not taken up—up to living tissue—by the lymphatics.

The passage of free oil shows the imperfect action of the intestines, the lumps of fat the imperfect action of the stomach. Dr. E. Schröder found that in the healthy stomach of a woman with gastric fistula, adipose tissue which was swallowed became so far disintegrated that the oil was freed from the areolar sacs which contained it, united into drops, and floated free in the fluids around it.¹

Deficient teeth are often a cause of indigestion, by preventing the proper chewing of food, and so allowing it to pass into the stomach in hard lumps, which act like a foreign body on the organ.

CASE XL.²—Hannah P—, aged 48, was admitted to St. Mary's August 17th, 1855. She was the wife of a laboring man unable to work by reason of paralysis, and she had for some time supported him by going out to field labor, so that she lived very hard, and, moreover, had lately lost thirteen teeth, so that even the rough food she did get was improperly chewed. Up to the previous February, however, she had been in strong health. Then she began to suffer pain in the epigastrium at odd times; but it did not prevent her earning her wages till the summer, when it became constant, and she was entirely invalided, partly from the pain and partly from giddiness and a feeling of prostration.

On admission her countenance was worn and sallow, her appetite was good, the pulse small and weak, the tongue cleaner and redder than natural, the bowels costive. The pain at the epigastrium was

¹ *Succi Gastrici Humani Vis Digestiva*, &c., auctore Ernesto de Schröder (Dorpati, 1853) p. 30.

² Case CL. in 2d edition.

constant and increased by pressure. She complained of want of sleep.

At first she was treated with hydrocyanic acid, but no benefit at all resulted. Then a blister to the epigastrium, on which great relief immediately began. Then she had a grain of opium every night and the following draught:—

R.—Misturæ ferri eo. flʒj,
Acidi galliei gr. iv ter die.

She was able to take a pint and a half of milk with lime-water in the day, and egg and other diet as well. But she did not lose her pain in the stomach till I cut her down to the milk and lime-water only, and gave her a drachm of bismuth three times a day. The latter prescription and the keeping of the blistered surface open for a month was at last successful, so that on September 19th she was able to begin eating half a mutton-chop daily, and on the 28th was discharged.

It will be seen here that the constant, though slight action of the cause, produced a chronic state of stomach, which demanded special, and those vigorous, measures for its restoration.

In chronic cases, as has been already mentioned in respect of acute, you find sometimes an insensibility of the skin of the epigastrium to ordinary stimulus.

CASE XLI.—Elizabeth P—, a single woman aged 28, was obliged to leave her place, where she was housemaid, on February 22d, on account of illness, and to come into St. Mary's February 25th, 1853. Her complaint was of epigastric pain and chronic vomiting, so constant that she brought up everything taken except biseuits and milk. A great variety of medicines and modes of treatment were tried without success,¹ and she went out dissatisfied on May 12th. As on careful examination of the vomit, no abdominal mucus, no blood, no sarcinæ, or in short anything save the food taken, could ever be found, as there was no local increase of pain on pressure, but instead of that a marked pulsation of the aorta in the epigastrium, and above all, as the patient gained upwards of eleven pounds in weight, spite of the evacuation, I feel no doubt it was a case of nervous or hysterical vomiting. Why I did not order her shower baths I cannot recollect. I am sorry, and can only imagine it must have been from a feeling of disappointment at the unsuccess of valerian, which was given. The case is so far imperfect and un instructive, but what I quote it for here is, that on March 23d a blister was ordered to be applied to the epigastrium for the purpose of testing the epidermic application of morphia. But after the trial of two blisters and a mustard poultice, no vesication was produced, and the experiment had to be abandoned.

¹ Among the *lædenta* in this case may be mentioned leeches, after the application of which to the pit of the stomach, the patient grew worse, having more sickness, more pain, and a little diarrhœa.

Treatment based on the Pathological Condition.

It cannot but strike any one who reviews either the typical cases I have collated from my notes, or those (not essentially different, I am sure) which have occurred in his own practice, that a general deficiency of the vital powers is more notably exhibited in chronic indigestion, from whatever cause arising, than in any other disease. I always, therefore, look forward to giving tonics as the prime therapeutical aim in all cases. Sometimes that part of the treatment can be commenced forthwith, sometimes it will be necessary to relieve temporarily certain of the prominent symptoms first; but without tonics no cure is effected.

My favorite tonic is quinine, in two-grain doses in lemon-juice sufficient to dissolve it, and diluted with water to a convenient bulk. Its action seems to be principally on the mucous membrane of the mouth, œsophagus, and stomach, which it astringes and tones up to a healthy state, restraining the secretion of mucus, and making the special secretions more active.

To quinine I usually add from $\frac{1}{24}$ th to $\frac{1}{20}$ th of a grain of hydrochlorate of strychnia, unless there are some contraindications to its use. It relieves flatulence, and that feeling of sinking when the stomach is empty, which arises from a sluggish state of the involuntary muscular fibres; and in cases of constipation reinforces the expulsive action of the peristaltic fibres on the mass of feces. The principal contraindication to its use is an oversensitive state of the nervous system. I have been obliged to leave it off in several cases of hysterical women because of the neuralgia which followed it, and in two instances of men agitated by business I have had want of sleep and excitement of mind attributed with apparent justice to strychnine. In the doses quoted cramps never are produced, and the slight inconveniences I have named cease immediately the alkaloid is omitted.

In large doses strychnine may produce spasmodic action of the muscles. I have had this happen in hospital, when administering it for other complaints. But even then not the slightest harm accrues, if the amount be diminished. A persistence in the remedy, such as one would not as a medical man advise, may even be harmless and continue to do the intended good along with the unintentional harm.

CASE XLII.—An active tradesman, in a fashionable thoroughfare, aged 45, came to me July 22d, 1857, exhausted by the anxieties of the London season. After every meal there was a sense of weight and distension in the epigastrium, and frequent eructations. At other times wind would pass by the rectum, and sometimes roll about in the bowels. The latter was especially the case at night, and he slept very badly.

I ordered him one-sixteenth of a grain of strychnia every morning, a quarter of an hour before dinner, and on going to bed. With the latter dose a scruple of charcoal. To live principally on mutton-chops and Burgundy.

On the 28th he complained that after each dose, in the daytime, of the strychnia he had a severe headache and cramps of the jaws and legs, yet he found himself so much better in respect of the flatulence and other symptoms that he had persisted in the treatment. He had no flatulence at night; he slept well, but still dreamed a good deal. The bowels had become costive, but that seemed to me simply due to the solidification of the feces, which previously had been unformed and pultaceous.

Some persons have a fear of strychnia accumulating in the body, and the effect of successive doses being concentrated into one, which to me seems impossible in a soluble diffusible salt. The fallacy has probably arisen thus—in cases of paralysis, for which strychnia was originally prescribed, the nervous system is usually so prostrate as not to respond to even considerable quantities; after a time the patient becomes more healthy and more sensitive, and then the dose which had been given day after day without effect, acts perceptibly, and perhaps vigorously—acting thus, not because it has accumulated, but because the nerves have at last become well enough to be conscious of it. A soluble and diluted salt of strychnia seems to me one of the most manageable drugs we have in the Pharmacopœia, because you can graduate the dose accurately to your requirements. The extract of *nux vomica* is dangerous, because you never know the exact strength of the preparation sold. Besides, it is just possible that its resinous contents may remain undissolved, and envelop some of the alkaloid, which may thus mechanically be really collected into an overdose in the alimentary canal.

Valuable, however, as strychnine is, it cannot take the place of quinine in the treatment of chronic dyspepsia. Its action alone is temporary, whereas the latter puts the body into a permanent condition capable of renewing itself, and cures by restoring health.

CASE XLIII.—D. F— placed himself under my care, October 24th, 1867. He had long suffered the usual symptoms of chronic atonic

dyspepsia, he said, namely, a weight at the epigastrium during the day, flatulence at night, and depression of spirits in the morning. He said he had taken courses of strychnine several times, and with great relief during the time he was taking it, but that the relief ceased the day he left it off. I advised him to take two grains of quinine with each dose twice daily.

A still more direct renewer of locally deficient vitality is Moist Warmth. The profession is now pretty familiar with its use in the restorative treatment of pneumonia, pleurisy, capillary catarrh, &c.,¹ and from the results of the treatment on a large scale, are convinced of its efficacy in acute disease. Chronic disease is an easier applied test. There are very few cases of chronically deranged digestion which are not benefited by the application of moist warmth to the epigastrium and abdomen. Fomentations of warm water (from 98° to 120° Fahr.) applied with a sponge or spongopiline, for a quarter of an hour every night and morning, advance the patient wonderfully. If there is much pain at night and restlessness, a linseed poultice spread about half an inch thick on brown paper, and sprinkled with a teaspoonful of laudanum, gives great relief, and relief in the best way, namely, by directly quickening the vital processes and checking that over-sensitiveness which is impeding them.

Rest is a very important element in the management of dyspeptics. An evidence of this is familiar to every hospital physician in the rapid recovery, when once admitted to the wards, of sick persons who have been attending for a long time as out-patients without benefit. And the most important part to rest is the stomach itself. The stomach should be spared both its *mechanical* and *chemical* toil.

The *mechanical* toil is the hardest, and therefore the most necessary to be avoided. A meal to a healthy man represents the laying in a provision against future rather than against present hunger; he eats more than he immediately wants in order not to have to eat again inconveniently soon. This loading is to a dyspeptic overloading, and must be shunned. A little snack of a cup of beef-tea, or a sandwich between meals, will give as much (or more) nutriment without the objectionable burden. And at meals a rule

¹ See "Lectures chiefly Clinical," pages 32, 68, 129, 135, 177, 192, 207, 213, 226, &c. (4th edition).

should be made that a sense of repletion is to be a warning to desist.

Another mechanical expedient for sparing the alimentary canal in its digestion of albuminous food, is dilution of the meal. Copious watery drinks carry the meat on quicker through the pylorus, and give relief to over-sensitive irritable stomachs. But at the same time it must be remembered that thus the time for the action of the gastric juice is shortened, and its solvent strength lessened, so that more is given for the intestines to do. It is better, therefore, to let this dilution be practised not during, but after the meal.

Dilution, however, should be avoided altogether where an obstructed circulation impedes absorption of the water by the portal veins. Patients with dilated heart, for example, and cases of anæmia and of diseased liver suffer much inconvenience from a soup diet. Corpulent persons also should avoid dilution; it washes away the albumen which they do want, while it allows the absorption of fat, which they are better without.

The *chemical* toil of the stomach may be lightened by giving it less to digest, and more to digest with. Take care that the weak but well-meaning organ is not driven to despair by solid lumps of unchewed victuals. Vegetable food must be friable, eaten very slowly, and without drinking at the same time, in order that the slowly secreted saliva may go as far as possible. The best form of nitrogenous aliment in bad cases is whey, or milk prevented from coagulating by a copious admixture of lime-water. This fluid meat may perhaps pass through the stomach unaltered, but the gastric juice will trickle through the pylorus at its leisure after it, and mixed with the intestinal secretion will digest the casein in the intestines. Next in easy solubility comes soup, made fresh, weak, and at a low temperature; fresh—that it may not decompose; weak—that it may be easily absorbed; at a low temperature—that it may not be filled with innutritious gelatine, or with insoluble hard-boiled albumen. Meat for invalids should be free from fat; which latter ingredient not only opposes the soaking in of the gastric juice, but also is apt to become rancid and produce those fatty acids whose presence especially causes pain to the stomach. The administration of pepsin will also aid a little the solution of animal food.

Leeches to the epigastrium may be employed with advantage in cases where *continuous* pain on pressure shows that there is some

tissue-change in the subjacent organ. But, on the other hand, they may be done without, and certainly they cannot replace any of the previously mentioned *treatment*.

The local application to the epigastrium of variations of temperature is often of use provided there be no catarrh of the gastric mucous membrane. It may be applied by the alternation of a cold and hot douche to pit of the stomach—in which case the alternations must be rapid, and the time of application short, say one minute or two minutes each; or to the back, in the situation of the dorsal and upper lumbar vertebræ—when a very much longer application is desirable, namely, as long as the patient can bear it without losing the consequent reaction. In spite of the thickness of various tissues which lie between the skin of the back and the stomach, the dorsal douche is very efficient. When a regularly built douche bath is not accessible, a hydropult garden machine is a good substitute, or a slab of ice or ether spray may be ingeniously made to take its place.

The expedients which I have enumerated do not interfere with remedies for the relief of pain, pyrosis, vomiting, and other symptoms which will be alluded to in future pages. And the dietetic rules are general, not entering into the distinctions between various elements of the dietary which will be the subject of the next chapter.

There is one plan of treatment very useful in some instances, which perhaps is better when tried alone, or at least alternately with the quinine and strychnine. I refer to the treatment by alkalies. These are usually alluded to in books as a temporary palliative in heartburn, acidity, and waterbrash. But what I mean now, is that which may be fairly called their “restorative” use, the effect pointed out by Claude Bernard, the augmentation of the acid gastric juice, and so of the normal peptic powers of the stomach. For this end they must be given in a continuous course.

The test of benefit being derived from an alkali is the dose not requiring to be increased as the patient goes on taking it, but, on the contrary, being capable of being diminished gradually, while relief from the recurrence of heartburn continues still to be experienced. This shows that the real health of the stomach is being restored; that a renewed life is developed.

But should the patient be driven by recurring pain to take larger and larger doses, it is evident that the palliation is simply a

neutralization of the normal acid of the gastric contents. This induces in the end weakness and over-sensitiveness, and such patients will, after a very short interval, appear again under medical care, usually in a worse condition each time; or they will become chronic druggers for life, or, perhaps, be finally cured by some clever quack who amuses their fancy while he bids them abstain from active remedies.

The due administration of a course of alkalies is best secured by the systems followed at certain Continental spas. I believe their reputation as panaceas of all bodily ills to spring from the renewal of the digestion which this mode of administration of an alkaline course is likely to bring about, and from the intimate connection which there is between the digestion and all other parts of the body. They do good in almost all diseases, because in almost all diseases the digestion is disordered.

We must not let ourselves be prejudiced against mineral waters by the little packets of nonsense, brought by post under various foreign stamps, which set forth in laughable language the omnipotence of their own "Abana and Pharpar." Doubtless, like the lady in Hamlet's play, they do "protest too much;" but there is some good in them for all that. Patients get there something more than the over-puffed and many-tested springs—air, rest, gentle exercise, new diet, change of scene, freedom from domestic nagging, and, perhaps, from domestic physicking, &c. These would do good were the waters even moderately poisonous. But the fact is, they are not at all poisonous, and many of them contain not only carbonic acid, which is a gentle normal anæsthetic to mucous surfaces, but also carbonate of soda, which, rightly administered, has been shown capable of increasing the digestive powers of the stomach. The right administration consists in giving it, not when the organ is full, and ought to be acid, but when it has parted with nearly all its contents, at a time as distant as possible from the meals.

When, therefore, I wish to prescribe a course of alkali, I think a better plan cannot be devised than sending patients to a spa containing that ingredient, and desiring them to arrange with the superintendent times for taking the waters in accordance with the above rules.

Of the two most frequented alkaline spas in France, Vichy and Vals, I prefer the latter, because the water contains a proportion of iron, retained in a state of carbonate by the excess of carbonic

acid, and, therefore, very soluble, and effective even in small quantities. In most cases of long-continued dyspepsia, there is a condition of anæmia, apparent or masked, and a moderate quantity of iron is useful by adding strength to the blood, and so strength to the stomach. Moreover, Vals is further off, and in the neighborhood of beautiful and romantic scenery, enough to tempt the patients to a tour, and to help them to shake off the invalidism which associating with sick people at the spa is apt to induce; whereas, Vichy is dreary in natural beauty, and destitute of all temptation to healthy amusement. One has nothing to do but drink and walk, and walk to drink again.

Of the German alkaline waters I know most of Ems. It is a naturally hot water, containing much carbonic acid, and conveyed in closed pipes to the establishment; so that warm baths saturated with fixed air can be had, a most vivifying addition to drinking. But the patient must abstain from gambling, or the morbid excitement will cancel, for the stomach at least, all the advantage gained. Nothing arrests the gastric digestion so much as hope deferred.

In reflecting upon the purely physical, exclusive of the psychical, benefits conferred by spas, we must remember not to attribute all even of those benefits to the salts, organic matters, and gases recorded in the analysis of the spring. Water itself is an important constituent of the gastric juice, and an augment to its quantity and power. It is a direct restorative agent, perhaps the most powerful of all, to the bile, both as regards its solid and fluid components, as found in the experiments of Drs. Bidder and Schmidt. Moreover, it is the quickest and most complete source of muscular power. Travellers in Central America tell us that the Indian porters, the most enduring porters in the world, preparing for a long hard journey, will drink several quarts of quite hot water. They state that it gives them strength, and I understand their performances quite justify the idea. Can we wonder at this when we reflect that four-fifths, or thereabouts, of the animal body consists of water. Can we wonder that such a powerful agent has been set on a pedestal to be worshipped as a panacea for all human ills?

While rejecting these pretensions I still acknowledge its power, and therefore enter into the detail of one of the minutiae of its administration which is not made a point of in other medicines. I refer to the temperature at which it is administered by mouth. Warm or tepid water is a direct renewer of the secretion of the

stomach, and, therefore, may be taken, and, indeed, should be taken, if required as a medicine, in considerable quantities. Cold water, on the other hand, is of use by contracting the bloodvessels of the œsophagus and stomach, and removing local congestion, if it exists. It acts as a shower-bath does, and, therefore, like a shower-bath, it should be limited in quantity. If it be swallowed in excess, there is a great loss of vitality, very conspicuous in weakly persons.

The same remarks will apply equally to a former recommendation of the application of the douche to the epigastrium.

CHAPTER III.

INDIGESTION OF VARIOUS FOODS.

SECTION 1.—Defects of digestion as exhibited in Vegetable food. SECTION 2.—In Albuminoid food. SECTION 3.—In Fatty food. SECTION 4.—In Watery food.

SECTION I.

Indigestion of Vegetable food, or of Starch, Sugar, and Woody fibre.

IN its native condition, either raw or when broken up by boiling, it does not appear that starch is capable of being absorbed by the alimentary canal. But on its first introduction at the mouth it meets with a fluid capable of converting it into one of the most absorbable of alimentary substances: indeed, its change into sugar by the saliva may be fairly regarded as its ceasing to be a part of a plant and becoming a food. The reduction of it makes it into a complementary food duly represented in our type of a perfect diet, milk, by its peculiar form of saccharine matter, "sugar of milk."

This metamorphosis begins immediately with the introduction of the morsel into the mouth, and is almost instantaneous in all parts with which it is brought into contact by the action of chewing. Take some boiled starch, and heat it with potassio-tartrate of copper. There is no change in the blue color of the salt. Now put some in the mouth, and hold it a few moments. When it is again heated with potassio-tartrate of copper, the metal is precipitated, and shows by its brilliant yellow color an abundant quantity of sugar.

The saliva then begins to convert starch into sugar immediately; very soon it will transform the whole mass. A mouthful of boiled arrowroot held in a healthy mouth for five minutes will show afterwards scarce a trace of starch remaining.

But it is true that the morsel is hardly ever allowed to remain in the mouth long enough for its complete conversion, hardly ever is it sufficiently boiled and chewed for the saliva to affect the whole of it. Much free starch and free saliva must be carried down the

œsophagus. During its passage the action goes on, and doubtless as much saccharine transformation takes place in the latter as in the former locality. But in a minute or two it must arrive at the stomach, and there the acidity of the viscus is said to put a stop to the saccharization. Nevertheless once that the mass has passed through the pylorus, its acidity is neutralized, the action of the remaining saliva recommences on the starch yet unconverted, and this action is reinforced by the intestinal juice.

By the unconverted starch I mean not only that which was unchanged on arriving at the stomach, but also a good deal set free since that stage of digestion. For besides the saliva, there practically comes into play in the solution of starch that which I have described as temporarily arresting it, to wit, the gastric juice. Cookery, even when most efficient, rarely ruptures the whole of the granules. Many escape in the best, and in bad cookery the majority escape. They cannot, therefore, be affected by the saliva, till their albuminous envelope has been dissolved by the gastric juice. Then the amylaceous matter may be converted into grape sugar, either rapidly by the saliva present, or more slowly by the pancreatic and other intestinal secretions.

For the reduction of starch, then, so as to bring vegetable food into a condition capable of easy digestion, the first point is that the salivary glands should secrete a sufficiency of fluid; and that not only at the moment of chewing, but that they should go on supplying it as long as any starch remains unconverted. Next it is almost always practically necessary that the gastric glands should aid the process.

Now, the salivary glands are more exposed to derangement by circumstances external to themselves than any organ not directly subject to the will. Temporary emotion affects them temporarily, and continued emotion affects them chronically. We all know the dry jaws of the coward, the lover, the pitiful, and how the tongue clings to the roof of the mouth when bad news is brought. We see too how for days, or even for weeks, "bread eaten in sorrow" can hardly be swallowed, so long it takes to moisten the morsel. Even in the healthiest person bodily exertion parches the throat. Again, there is scarce any morbid condition that does not make itself felt in the fauces and seen on the lingual surface. Numerous tests of the saliva in inflammatory, and in other affections which seem remote (such as uterine disease, phthisis, chlorosis, ague), show that

the changes are marked enough to be detected by chemical analysis.¹ These changes are all in the direction pointing to imperfect vitalization: either the animal constituents are deficient, producing a watery saliva; or they are decomposed by accumulation, sour or putrid. It was to have been expected, therefore, that all defects of general vitality, such as those instanced in the above-named morbid conditions, should give rise to such changes; they are in fact part of the general deficiency.

Equally important also is the absorption of the sugar thus formed. In health a very great part is absorbed in the mouth and gullet, sometimes all, for chemists have great difficulty in finding it in the stomach, unless it is swallowed in excess. Some of it is probably converted into the lactic acid, which aids the solution of flesh food, and the rest taken up as sugar by the intestines. Still, even in health, a good deal of both starch and sugar escape, and appear in the feces. But in the catarrhal state, the mucus which lines the membrane when it is formed, is an almost impermeable impediment to osmosis from its insolubility in water, and decidedly arrests absorption. All mucus is a degree of disease, and every Briton knows how easily it is formed by very slight external influences.

It is clear, then, that for the easy digestion of starch the whole of the alimentary canal must be in a normal condition.

If it is not so, the excess of sugar becomes changed in a great part into lactic acid in the stomach in quantities and degrees proportioned to the length of its detention in the stomach, and being partially regurgitated into the mouth, constitutes the disease generally known to the public as "Acidity." Some small quantity also may undergo the alcoholic fermentation, and the carbonic acid let loose distend the portion of the alimentary canal in which it is formed, or escape upwards or downwards as "Flatulence."

Acidity and flatulence of carbonic acid are the distinguishing features of the indigestion of vegetable food.

There is no objection to the name "Acidity," if it be remembered that it means merely acidity out of place or too long continued, and be not allowed to lead to our viewing the normally acid state of the gastric contents as an evil to be combated.

It is not rare, however, to find it misinterpreted even by those

¹ They may be found in Simon's "Chemistry," vol. ii. p. 9 (Sydenham Society's Translation).

who ought to know better. I have heard it spoken of as an excess, "excess of gastric juice"—that is to say, too much of a vital act, too much life. Such a mode of speaking, if it leads to anything, must lead to faulty thinking and bad treatment. Instead of being an excess, acidity itself is a proof of deficiency.

CASE XLIV.¹—A medical man complained to me a year or so ago of what he called "overabundance of gastric juice."—"Why do you call it overabundance of gastric juice?"—"Oh, because acid arises up in my mouth, and three or four hours after dinner I sometimes throw up my victuals so sour as to make my throat quite sore."—"Well, now," I said, "observe what comes up, look at one of the pieces of meat in it, and you will see it hardly altered from the condition in which it was swallowed. But look at what a healthy person throws up when made to vomit, say by sea-sickness, four hours after a meal; it is all homogeneous, and the lumps of meat are quite broken up. If you really secreted an overabundance of gastric juice, you would have dissolved your meat more quickly, instead of less quickly than the healthy person."

We know by experiments on artificial digestion, that an increase in the quantity of the solvent quickens the solution of albumen. We find, for instance, that the amount of pepsine contained in twenty grains of Boudault's powder will dissolve a piece of hard-boiled white-of-egg much sooner than five grains. The same thing would of course happen in the stomach: were there more gastric juice, there would be quicker digestion. But in acidity such is notoriously not the case; the aliments lie for a long time in the upper part of the digestive canal, and often are passed still undissolved in the feces. It is a chemical act of decomposition directly opposed to the vital act of digestion.²

Now, when this vital act of conversion is carried on with rapidity by a stomach making abundance of gastric juice strong in pepsine, then chemical decomposition is prevented; nay, it is even arrested after it has commenced, as may be seen by putrid meat not becoming more but less putrid, as it passes through the body of a healthy animal. But when the conversion is slowly or imperfectly performed, then the chemical change has time to take place, and does so very soon, being favored by the heat, moisture, and organic matter in a state of change. If the food remain too long without

¹ Case CVII. in 2d edition.

² I call a "vital" act any which forms part of the great circle of life, such as is the conversion in the stomach of albumen, previously incapable of solution and absorption, into peptone capable of entering the circulation.

becoming chyme, the protein compounds putrefy with extreme rapidity under such circumstances.

The following simple experiments make the matter very clear to yourself or a class. As far as his own improvement is concerned, the skilled physiologist may skip the next page or two without loss.

Compare some hard-boiled white-of-egg, which has been immersed in saliva, at a temperature of 100° Fahr. for a day, with another portion from the same egg kept the same time in distilled water. Your nose warns you of the difference directly; the first is intolerably fetid, the second quite sweet. Exactly similar is the fate of undigested albuminoid matter, whether animal or vegetable, in contact with the mucous membranes inside the body.

But how does that affect the case of acidity? Try another experiment. Put in one beaker some syrup of grape sugar, and it remains for hours quite neutral and natural. Set to soak in some of the same a piece of putrefying albumen for a few hours, and keep the mixture at the temperature of the body. You find that a piece of litmus paper put in it is strongly reddened, showing the copious formation of lactic acid. In another beaker, the formation of butyric acid from fresh butter by the same means may be shown.

Just so all the grape-sugar and fat swallowed, meeting in the stomach or intestines with decomposing animal food, collected in a mass or glued to the side by a too sticky mucus, ferments quickly throughout, and forms lactic and butyric acids in great quantity.

As, even amongst wealthy meat-eating nations, from half to five-sixths of the solid food consists of starch,¹ it is evident that one of the most bulky contents of the stomach must be the sugar which has been made by the saliva out of amylaceous food. Here, then, is ample material for the formation of lactic acid to almost any amount. Add to this the oleaginous substances which it is impossible to avoid in any diet, and which, from being insoluble in water, turn into peculiarly acrid and concentrated acids, and you will have no difficulty in accounting for acidity, without recurring to a theoretical excess of gastric juice. Acidity, then, is an evidence of increased chemical, and, therefore, of decreased vital action—a proof of incomplete digestion, of deficient activity.

¹ See the dietaries of soldiers, prisoners, laborers, and others, analyzed by Dr. Hildensheim in "Die Normal-Diät," p. 6. Berlin, 1856.

Requiring so much, and so much that is soon affected by outward circumstances, the digestion of starchy food may be easily understood to suffer the first, the most completely, and the most commonly.

In nearly all the cases I have hitherto cited, it is starchy, saccharine, or woody matter which has been especially indigested, as shown by the symptoms recorded. The deficiency of power is exhibited mainly in respect of potatoes, pastry, sugar, malt liquor, and sweet wines, all of which produce discomfort in the epigastrium or all round the waist, from their fomenting into an excess of lactic acid. This is increased to pain sometimes by taking food, but in the slighter cases not by pressure. Then follows flatulence, sometimes gastric, bursting upwards in eructations, sometimes intestinal, rolling about in borborygmi, sometimes only colonic. The flatus is undistinguished by any specially nauseous odor, being scented only by the normal contents of the alimentary canal, and consisting chiefly of carbonic acid. Accompanying the flatulence there is usually restlessness at night; the patients go to sleep, but soon wake up again, and lie tossing about with an uncomfortable sensation, difficult to describe, in the head and abdomen. There is often a persistent sense of fulness in the epigastrium, which only becomes pain some time after meals (Cases XX., XXI., and XXXII.). Occasionally there is vomiting of the ingesta (Case XXXI.). The bowels may be regular in action, especially when the flatulence is confined to the stomach (Case XXIII.). More commonly they are costive (Cases XXVII., XXIX.). Rarely there is irregular diarrhoea (Case XXXI.).

The cause of the special indigestion and decomposition of the amylaceous part of the diet may be sometimes traced to the demonstrable deficiency of that secretion whose office it is to convert starch into sugar. Though not made a separate subject of complaint, dryness of mouth is noticed in Cases XXII., XXVI., and XXVIII. In those who have the opportunity of choosing for themselves the distinction between vegetable and animal food is soon experimentally discovered, and the patients notice it without the test suggested by the physician. Cases XXV. and XXIX. avoided the former of their own accord. Sometimes lumps of undigested vegetables will appear in the feces (Case XXXIII.). There is usually heartburn two or three hours after meals. Sometimes there is waterbrash (Cases XXIX., XXXIII.), and indeed this

condition seems to be specially associated with the indigestion of vegetable rather than of animal food.

We may observe that in respect of amylaceous matter abnormal digestion is *slow, defective, and painful* contemporaneously, there is bradypepsia, apepsia, and dyspepsia all at once (see page 18.)

The indigestion of amylaceous matters is much more conspicuous when they are taken mixed with albuminous or fatty food. A meal of vegetables alone will sometimes be borne without any inconvenience, sometimes with only a little flatulence after it, when the admixture of it with meat will be followed by long-continued distension, pain, and much more flatulence. Yet in the same case you may find meat taken alone perfectly and painlessly digested. The indigestion is of vegetables, but it is made worse by the presence of meat. There are several explanations of this. In the first place, there is the explanation afforded by the experiment detailed at page 75, where the rapid acidification of grape sugar in presence of decomposing albumen is shown. Then also the gastric juice, required to dissolve the albuminous envelope of the accidentally unbroken starch granules, may be supposed to be fully occupied in the digestion of the animal fibre. Then the fat, necessarily mixed up with all meat in some amount, quickly turns rancid, and hastens the fermentation of the sugar (into which the starch is being converted) before it can be absorbed. The formation of butyric and carbonic acids in excessive quantities ensues, and hence pain and distension of the epigastrium. The harm done by the meat is the precipitation of this result, which taking place slowly is borne without inconvenience.

CASE XLV.—William B—, aged 28, was under my charge all the earlier part of 1867, for flatulence and diarrhœa excited by almost every meal, except when he was living a perfectly idle life. Potatoes, fruit, and indeed all moist vegetable food induced immediate heartburn, and had therefore been struck out of the dietary by medical orders. He got quite well by going to Italy in the spring, and regained his spirits and his weight of flesh; but a return to business in the summer brought back his ancient ailments. Yet he was exceedingly unwilling to surrender work. At the end of August I saw him in consultation with Mr. Meade of Bradford, and it was agreed to put him on the following plan, viz., at first a purely vegetable diet with milk; in a short time to begin taking a mutton chop with only milk and water and a dry biscuit for dinner. At the end of September he writes to me that the plan has been perfectly successful so far. Both heartburn and flatulence and diarrhœa are avoided, and he is able to attend to business.

Where the indigestion of vegetables depends on general causes, such I mean as would act in a greater or less degree on the vitality of the whole body, such as starvation for example, then it naturally ends in the indigestion of meat, by the gastric glands as well as the salivary becoming affected. In Case XX. the patient "could not relish" her meat, in Case XXI. it caused pain. A longer continuance of the injuries inflicted by cholera in Case XXXIV. than in XXXIII. made the stools "fetid." And when once it has got to the indigestion of meat, the indigestion of vegetables is aggravated threefold by the continually diminishing quality of the secretions necessary to their solution, and emaciation and anæmia in various degrees ensue. It is in that condition in which the patients usually come to a physician. But when the cause of the amylaceous dyspepsia may be traced to a local defect, to something especially affecting the salivary glands, then it may continue for a long time in an aggravated form, and yet the gastric glands perform their office well, and meat be digested fully.

CASE XLVI.—Captain D—, aged about 60, first came under my care in October, 1856, complaining of a superficial soreness of the tongue and fauces which he had felt for some time, and had been latterly accompanied by a looseness of bowels, in which the stools were ragged and unformed, but not fetid, alternating with occasional constipation. When the bowels were loose, the urine was thick with lithates. The throat was reddish. The tongue was coated with a yellowish coat of epithelium, pyramidal, ending abruptly with a sharp edge, the centre of which was occupied by a reddish spot denuded of epithelium and smooth. He is a thin nervous looking man, but not otherwise unhealthy. I gave him senna, borax and hydrocyanic acid, nitrate of silver, kino, myrrh, &c., without benefit. Indeed he seemed to grow worse, and constantly complained of excessive dryness of mouth. Then he took iron and cod-liver oil and improved a little. Then iron and small doses of aloes, and improved quicker, so that he got out of my hands in August, 1857. On December 12th, 1862, Mr. Malton called me in again to see him. It appeared that in the interval he had been fairly well, but that his mouth was never moist enough. Latterly again it had been growing much drier, and the intestinal excretions had again assumed a ragged appearance. He described them as occasionally fermenting and frothing after they were passed. There is added also in the notes of this period the symptoms of pain at the epigastrium, and I ordered a blister for it, but I have no record of its character. He could eat dry mutton chops and biseuit three times a day, without inconvenience, but if he indulged in vegetables he was sure to be ill. He had been taking iron, but had not profited. I gave him quinine and strychnine, and he slowly improved, so that after the 13th of February, 1863, I have not seen him again.

The capability for digesting a diminished amount of starchy matter, is a normal characteristic of old age. After middle life, in proportion to the years, is less vegetable and more animal food needed. The indigestion of vegetables is usually associated with a tendency to dryness of mouth.

Sometimes this indigestion from the continually growing insensitiveness of old age is not perceived by the sensations, or only by the remote effects, such as flatus in the bowels; in persons of more excitable nervous system, such as those who are intellectually highly endowed, there is discomfort in the upper part of the digestive apparatus.

CASE XLVII.¹—Hon. Major C—, aged 79, has attained old age with as little suffering from illness as most people. What brings him to consult me (December 29th, 1866) is a painful sensation rising up from the epigastrium to the back of the throat at uncertain times (generally from three to four hours) after food. He is able to prevent it by eating very little, but he fears that what he takes under this restriction is not enough to nourish him. He is also able to cure it temporarily by soda or potash, but has heard that is a bad habit. Though he is old, he wants to be cured. His mouth gets very dry from lack of saliva. I advised him at his age not to be too solicitous for a second youth, but ordered a quinine mixture with a grain and a half of iodide of potassium to be taken twice a day for a few consecutive days occasionally. It seemed to agree with him, for the dryness of mouth was less.

The iodide of potassium in the last prescription, and in previously quoted cases, was designed to promote the activity of the salivary glands. I have found that it does so in my own person, and it has seemed to me that the saliva is not merely increased by the addition of water, as the urine is by the ingestion of nitre and other neutral salts, but that it converts more starch into sugar by the augmentation of its special ferment. If such is the fact, it must be an useful drug where the digestion of amylaceous food specially is defective. I will cite an instance in which iodide of potassium was given for another purpose, yet where it would seem to have been effectual while more local and intentionally adapted means had failed.

CASE XLVIII.—Margaret E—, aged 18, an unmarried maid-of-all-work, was admitted to St. Mary's, October 22d, 1852, complaining of pains in her feet and ankles—arising probably from the habit usual among maids of all work of sleeping in back kitchens, among damp

¹ Case C. in 2d edition.

stores and black beetles—and of pain or weight in the epigastrium increased after food. She was treated first for the latter with leeches to the epigastrium and bismuth, and then with iron, but apparently without profit. Then the pains in the limbs were taken in hand, and the patient had two grains of iodide of potassium three times a day. Under this she got well altogether of both ailments, and was discharged November 19th, “cured.”

But it is right to add that this action of the iodide of potassium is a very temporary one, and that a continuance of the drug cannot be trusted to for producing a continued effect. Neither does the use of increased doses obviate the difficulty. The large dose in the accompanying case was given for another purpose, but it is shown to be temporary in its effects.

CASE XLIX.¹—Mr. Wm. S—, an artist of middle age, was my patient in the autumn of 1866 for *alopecia* of doubtful origin. Among other experiments I tried the effect of iodide of potassium in doses of thirty grains a day. It did no good to the skin or nails, but the patient at first took a great fancy to it because it enabled him, he said, to take his meals of mixed food without consequent discomfort. He could digest “even potatoes and beer.” After a fortnight or so, however, he was forced to confess that his stomach was not what it was in youth, and that he was not to be exempted from the “care for his meat and diet,” which the Son of Sirach considers characteristic of a good man of intellect. After three weeks’ use, the benefit derived from the iodide of potassium had entirely ceased.

It is clear, therefore, that in the employment of this drug we must seize the opportunity of the turn of the tide, and throw it in just at the right moment. If we begin too soon, the effect ceases before our patient is well, and he will be apt to fall back and lose confidence in the treatment.

The omission of sugar from the diet is often a very efficient cure in cases of the indigestion of vegetables. It is an article that can be easily spared, and when once left off is not missed.

CASE L.²—Edward W—, a gentleman farmer, aged 45, and inclined to corpulence, came to me in March, 1848, complaining of extreme pain running up the back of the sternum in the third hour after almost every meal, but especially after breakfast. This was followed by intense headache and giddiness, so that he feared he was going to have apoplexy. On examination of the stomach it was not painful on pressure, but drummy to percussion close up to the cardiac pulsation.

¹ Case III. in 2d edition.

² Case XXXI. in 2d edition.

I ordered him a course of colocynth and mercurial purgatives, and saw him again in July. The headache and the fear of apoplexy was then relieved, but the dyspeptic pain was as bad as ever, and the tongue was very yellow and thickly coated. I desired him to abstain from sugar and take his morning tea with a slice of lemon in it.

In March, 1850, he came to me for a gonorrhœa which had become obstinate, and I took the opportunity of asking him about his old dyspeptic symptoms. He said abstinence from sugar had quite cured them.

I do not mention the course of colocynth and mercurial purgatives as a treatment worthy of imitation, for I think it unnecessary and slow, as indeed is shown by this case. I cite it merely as part of the history, which it would be untruthful to omit.

In addition to these pains caused by its fermentation, sugar will in some instances cause pain immediately on its ingestion. It has seemed to me most probable that in such cases there is some rawness or local morbid sensitiveness of surface in the primæ viæ, and that the pain is analogous to the peculiar sort of twinge which the presence of sugar will cause in a tooth unnaturally sensitive from caries, or even from neuralgia without solution of continuity. This pain arises too immediately to be due to decomposition. Syrup does not cause it, but only hard sugar.

Struck with such cases as the last, some persons would carry the treatment further, and think that in all instances of the dyspepsia of vegetables we have only got to omit the objectionable article from the dietary and all is done. That which causes pain is to be left off, and the pain ceases. True—but man is an omnivorous animal, and requires omnigenous food. He can be kept alive perhaps for a time on one food, but not in health. Take an example of the carrying out of such treatment *à l'outrance* in respect of vegetables.

CASE LI.¹—E. H—, a Liverpool merchant, aged 30, of muscular build but rather bloated flabby aspect, came to me in December, 1859. He complained of a foul taste in the mouth like bad fish, low spirits, and want of appetite for breakfast. He had also occasional attacks of headache accompanied by nausea and vomiting, which nevertheless did not relieve his permanent condition. He had been gradually getting into his present state for six years: the administration of biters and acids had done him temporary good occasionally, but worked no cure. He said that in deference to medical advice he had been most careful in his diet, eating nothing but lean meat and stale bread

¹ Case LIII. in 2d edition.

or biscuit. Vegetables had been forbidden, because they had at first caused flatulence and heartburn, which did not occur at all under the use of the carnivorous dietary. On examination of the mouth, the tongue was seen to be coated with smooth yellow epithelium, especially at the sides; the gums were loosened from the teeth, swelled, red-edged and soft. The patient said they often bled when he cleaned his teeth. I thought at first some of his medical advisers must have given him mercury, but I could get no history of pills or powders, in which that metal is usually administered, and I am disposed to attribute the whole of his existing symptoms to an exclusively meat diet.

For direct treatment I advised him to eat milk porridge and water-cresses for breakfast, salad and meat and stale bread for luncheon and dinner, and lemonade or fruit-water ice instead of tea. As an indirect aid I prescribed some bark and chlorate of potash. He soon got well.

It is singular how slight a change of diet will bring on minor manifestations of scorbutus.

CASE LII.¹—During his attendance upon me after a severe operation, one of the leading surgeons in Europe related a bit of personal experience apropos of my complaining of gastralgia after salad or strawberries, I forget which. He said he took a house out of London one summer, and used after his daily work to join his family (who dined early) at tea and mutton chops. After a time he found spots of purpura on his legs, boils, &c. He exchanged the tea for vegetables and beer, and immediately regained his accustomed health.

Patients and doctors both make a great mistake in shunning absolutely all that causes pain or inconvenience. They ought to consider whether the thing shunned is or is not an essential to high health; if it be so, every effort should first be used to get it borne without pain; where that goal cannot be reached, wisdom and duty will often guide us to submit to the pain for the sake of the accompanying advantage.

It may be remarked that the designed attainment of any high degree of voluntary pleasure always involves endurance—endurance of disagreeable sensations which coming upon us against our will would be real torture. A day's hunting, a match at cricket, an Alpine tour, even a picture-gallery or a ball, success in love, literature or war, are impossible to those who recoil from bearing immediate pain. This ought to be—and (*experto crede*) is—a consolation to many a sensitive sufferer. When it is pointed out that their pains are identical with what they and others have borne without a murmur, nay without notice, in the pursuit of enjoyment,

¹ Case LIV. in 2d edition.

their hopes and aims may be, not so much for the absence of the sensation, as for the vigor which will ignore it.

I do not think, then, that we profit much from those off-hand advisers who suppose they accomplish everything by forbidding the use of the sort of food which produces the symptoms. On the contrary, as I have shown by examples which every one may cap out of his own patients, if he will but turn them over in his mind, an actual state of disease may arise from persistence in the remedy.

A partial repose for a time, and abstinence from an unnecessary excess in the undigested dishes, is doubtless wise. But that abstinence must not be complete or final. What the patient wants, when he complains he cannot eat so-and-so, is not to have "don't" said to him—his stomach has said so already—but to be enabled to eat it like other people.

The temporary rest may be gained often by a change in the mode of preparation of the articles which cause most inconvenience, often by the substitution of something else, not so agreeable, perhaps, or so common, but which will not be objected to for a time.

The following details may be of use. In amylaceous indigestion the use of *sugar* in such quantity as to cause a sweet taste, should be left off. Tea can be made in the Russian fashion, namely, by pouring the hot tea on a slice of lemon with the skin on, thus retaining all the aromatic stimulus of the drink without its indigestibility. All lozenges and sugar-plums and sweet confectionery, of course, will be interdicted. The best substitute is oranges or lemons.

For ordinary *bread* let the patient frequently substitute biscuit, toast, or Stevens' aerated bread. Baker's bread is usually easier of digestion than home-made.

Potatoes may be tried finely mashed and mixed with meat gravy, but they can seldom be digested.

As *vegetables*, stewed lettuces, cabbages, spinach (hot), and golden cress, water-cress, and salad (cold), may be taken. A small quantity only of these is required to keep up the health, and nobody eats so much of them as they do of potatoes.

From green vegetables possible of digestion by weak stomachs, must be excepted peas, beans, and, in short, all the papilionaceous plants usually eaten. They are famous for producing flatulence. M. Chomel attributes this to the evolution of atmospheric air contained in their spongy husks; but I think the cause lies deeper

than that—probably in the specific action of their empyreuma, arresting the absorption of air in weakly persons. For the bulk of air is greater than could be packed in their tegumentary tissue.

An example of the mechanical differences made by cookery in the form of starchy food, are the two sorts of crust known as “short” and “puff” paste. In the former, the butter is thoroughly incorporated with the dough, so as to divide the starch-granules one from another, and permeate the gluten; while in the latter the dough forms thin layers, like a quire of buttered paper. If the teeth are imperfect or mastication careless, those strata of dough are well known to form in the stomach a solid mass, which is difficult of solution in the upper part of the intestines; whilst the friable paste (the “short”) is mixed with the rest of the food, and if the butter be fresh, causes no discomfort.

Now, some dyspeptics are such delicate measures of good or bad cookery, that they can take “short” pastry, but not “puff.” It is always worth while to make the trial.

There is an advantage in not mixing too much the animal and vegetable food. In a weak stomach they interfere with one another’s digestion. A light luncheon of bread and butter, rice pudding, fruit, and vegetables with a little vinegar, can often be borne without inconvenience, which, with the addition of meat, would have caused flatulence. The dinner after this may be restricted to meat without injury.

Particular care should be taken that vegetables are thoroughly boiled soft all the way through, and dried on a cullender.

A certain quantity of oleaginous matter renders vegetables in which there is much combined water, less massive in the stomach. Thus, milky rice pudding does not collect into a lump as plain rice is apt to do. In making the latter dish up for baking, eggs should never be used. Baked albumen is one of the most insoluble forms of albumen.

Plain boiled rice should always have a little fresh cold butter mixed up with it. In that way it will serve as an accompaniment of meat at dinner.

Stewed pears and roast apples are a good substitute for sweets. A little fresh butter improves them also.

But melted butter sauce is an abomination. Nine times out of ten it is rancid, or becomes so five minutes after it is swallowed—that is to say, directly the flour in it is converted by the saliva

into glucose. The best sauces are pepper and vinegar, or pepper and boiling water with a little salt in it.

SECTION II.

Indigestion of Albumen and Fibrin.

Grazing animals are obliged to take their food leisurely, so as to mix it up with the secretions of the mouth, and many of them even to bring it up and chew it again, if they would not have it ferment in the bowels and risk a rupture. On the other hand, to beasts of prey the only use of saliva seems to be the keeping their throats moist. They need to chew the morsel only enough to prevent it sticking in the œsophagus. It would appear that while vegetables require for their perfect digestion a perfect condition of the whole alimentary canal as sketched out in the previous section, flesh meat is at least independent of the salivary glands.

And this observation, drawn from natural history, is quite confirmed by physiological experiment, which finds the peculiar solvent of albumen and fibrin in the gastric glands. These glands the salivary can only aid by affording an aqueous diluent.

There is also this difference between the digestion of starch and of albumen, that whereas normally the former should be rapidly converted into an absorbable substance, and rapidly absorbed in the upper part of the alimentary canal; the latter does not begin to be dissolved till the food has proceeded a considerable distance, and the action is continued for nearly the whole of its course. In the healthy subject, a great portion of the sugar has been taken up before the albumen is affected at all.

The indigestion of albumen is not so frequent as that of starch, for it is not so readily induced by external circumstances. When it does occur, its symptoms seem to be, first, a loss of appetite, then nausea. If albuminous food be swallowed in spite of this, there is pain in the epigastrium, and often vomiting, which relieves the pain. Should the meat be retained in the stomach, there is acidity (from the formation of butyric and lactic acids and the fermentation of any starch present). There is a taste of the meat in the mouth for some hours. Sometimes there are nauseous, putrid eructations. The bowels are usually costive, by reason of the small quantity of food eaten, and the deficiency of bile. But if

food be forced down, there is sometimes a looseness, and the stools are very fetid and slimy. Usually they are light colored. Sometimes there are actually lumps of undissolved meat in them. There is not often much colonic flatus, but what is passed is very fetid with sulphuretted hydrogen. In chronic cases anæmia and debility are early symptoms; amenorrhœa and leucorrhœa, and hysteria quickly follow in females; indeed, they are the most usual symptoms that bring these patients to the physician. In women the hysteria may induce chronic vomiting, but chronic vomiting is not the usual accompaniment of albuminous dyspepsia in men. Indigestion of meat is more common in the weaker than in the stronger sex.

The most familiar cause of this form of indigestion is an acute illness, especially of a febrile character, as all know who have attempted to nourish too quickly patients recovering from continued low fevers of all types, scarlatina, rheumatic fever, &c. The dyspepsia produced by this over haste to load the stomach with solid flesh food, is of the acute kind, and has been already commented upon (in Chapter II. page 37). Its duration will depend on the mode and degree to which the secreting structure has been affected; whether, as in scarlatina, merely the exudation of pepsine is obstructed by the accumulation of epithelium, in which case the appetite soon returns; or whether, as in typh-fever, its formation has been arrested. In these cases generally no remedy is required besides patience.

But in chronic cases from chronic causes the longer you wait the less you gain; and, whatever the origin of the indigestion of flesh food, it becomes more obstinate by time, and brings with it a train of morbid changes which require themselves to be separately righted.

CASE LIII.¹—In November, 1861, I admitted to St. Mary's a pleasing well-grown girl, of whom I gave the following account in a clinical lecture at the time:² "Margaret C—— is a girl of corpse-like paleness, made more conspicuous by red hair, hardly able to raise herself in bed. Her age is twenty, and she seems to have enjoyed generally very good health, as is shown by her remembering that she had such an unimportant discomfort as a pain in the right side when she was a school-girl of seven. She was carefully brought up by a step-father in a higher class of life; but three years ago she lost

¹ Case IV. in 2d edition.

² "Lectures chiefly clinical," Lecture XXVII. (4th edition).

him, and had to go into service as a housemaid at the age of seventeen. For that work she was scarcely strong enough, and had been too tenderly nurtured; so after eighteen months' trial she gave it up, and was apprenticed to a Berlin-wool shop. There her mental superiority was recognized, for she quickly became forewoman with three girls under her in a shop at Maidstone. She felt the responsibility a good deal, and also thought the closeness of the shop did not suit her, although it did not make the others ill. However, she retained in her face a high color, for which she seems to have been somewhat admired, till nine months ago, when she began to lose it, and in a few weeks became as wax-like in hue as she is now. In the first stage of her ailing the appetite was large, so that she always felt in want of food; but after three months it failed, then ceased entirely, and she took a disgust to all nutritious articles of diet. She had a good deal of pain in the epigastrium and to the left side of it, and also suffered from palpitations and pain at the heart. A quarter of a year ago she spat up some blood, and had a little cough, which frightened her much. Thrice during the nine months she has had attacks of low spirits with crying, which is usually set down to hysterics; yet there is nothing abnormal in a girl being sad when she is out of health, or in her crying when she is sad, and Margaret does not appear at all hysterical now. The catamenia had always been quite regular and sufficient till the commencement of the *anæmia* nine months ago, when they began to get scantier and scantier, and at last ceased entirely. The urine is pale and watery, the stools are scanty and steadily rare; but there is never any sudden gush of bulky motions, no diarrhœa alternating with constipation, or other indications of accumulation of feces in the intestines.

"The patient expands her chest perfectly, and there are no signs in the lungs to give rise to a suspicion of tubercle, or at all events of tubercle in such a quantity as to account for the *anæmia*. There was at first a soft systolic murmur in the heart when she was agitated, but that went away after she had rested a few days in bed." As regards treatment, I remarked—"It is obvious that if I had written down ever so many 'ordinary diets,' one to whom the very sight of food was an abomination would have gained nothing by it; she would simply have gone without. I directed no meals at all to be taken, and no solid food; but a cup of milk with a third part of lime-water in it to be given as a medicine every two hours, and a pint of beef-tea in divided doses during the day. After two days she managed to eat an egg also daily, and after twelve days of gradual additions of this sort, you will find her on full allowance of mutton-chops, porter, beef-tea, and milk." She had also iron as medicine.

The history of this case exhibits, first, an untoward expenditure of energy on the unusual responsibility, and a consequent exhaustion of vital force, so that there is no more to spare for the gastric digestion. Mental emotion acts first and most usually, as I have already pointed out, on the salivary glands; but if long continued it also affects the stomach. The more prolonged efforts of thought, care, and anxiety, affect indeed the mouth less, but from their long

continuance exhibit their evil action more on the gastric digestion. Pity may dry up our mouth, but a tedious midwifery case will make our last meal heavy at the epigastrium. The patient's natural appetite being thus depraved, she felt at first a craving to supply the place of that nutriment which was wanting from the indigestion of the meat. Then she lost appetite and felt disgust at animal food, for the gastric juice was not formed to digest it with. The solid meat she swallowed was simply wasted, for it was not dissolved.

That anæmia should follow such a state of things is no wonder. One is rather surprised at the slowness of its supervention in some cases. And that the catamenia should cease is a natural consequence of the anæmia. Chlorosis usually takes its rise in indigestion.

The treatment may be described as the gradual scaling of a ladder of albuminous diet. The first step is the administration of a completely fluid food, the milk guarded against coagulating into a solid by the alkaline lime-water, and the beef-tea without meat in it. Then eggs, and then bread, and lightly cooked mutton-chops, and at last the ordinary mixed diet of the hospital. A short ladder, and with long steps for economy's sake in a charitable institution, but capable of being made easier of ascent by multiplying the rungs for richer invalids.

A very common feature in indigestion of meat is costiveness. It is an unfortunate complication, for it often induces the patient to take purgatives, and by most purgatives the gastric deficiency is aggravated, so that the disease and the medicine play into one another's hands.

CASE LIV.¹—In October, 1865, a maiden lady of 34 was placed under my care by Dr. McCall Anderson, of Glasgow, who quite agreed with me in my view of the case, though circumstances prevented him from attending to her himself. Since girlhood her bowels had been very costive. The presence of the retained feces produced disagreeable sensations, to relieve which for twenty years she had been in the habit of almost daily taking purgatives of her own accord. For the last few years pain in the epigastrium had gradually become habitual with her, and as it was immediately increased by solid food, she had entirely ceased to take meat. The consequence was, increased costiveness, increased sensitiveness of epigastrium, increased debility. The catamenia diminished in quantity and frequency, making a scanty show for a day or two about three times a

¹ Case LV. in 2d edition.

year during the height of summer, and never in winter at all. Her complexion was pink and white, and her lips not pale, but she was very thin.

She had an opportunity of breaking out of all her old associations and habits by a visit to some country friends in France, and I urged her to accept it, and to make a complete change in her mode of life. I desired her to let her bowels go unopened for as long as four days if they chose, and then use a simple water enema, if necessary—to bear the pain caused by the first few mouthfuls of each meal, and to eat more and more meat at it each day without flinching—to drink Burgundy. To aid her in this I gave her for a few weeks quinine and strychnine three times daily.

The last report I have of her is dated March 23d, 1866, and states that she required no enemata, the bowels acting of their own accord every three days; that food scarcely ever causes her pain, though she eats nearly as much as other people; that the catamenia had reappeared in February, after being absent since the previous July.

The result shows that no harm results from the infrequency of alvine dejections. It is the natural consequence, partly of the weakness of the peristaltic movements, but more particularly of the deficiency of bile arising out of the deficiency of albuminous nutriment. At all events it is best cured by flesh food. In evidence I would quote not only such cases as the above, but also experimental observations. For example, in an experiment made by Dr. Nasse on a dog,¹ a diet of bread and potatoes caused a daily secretion of 171.8 grammes, in which was 6.252 of solid matter; whilst meat made it amount to 208.5 of fluid, or 7.06 of solid residue. Again in the series of experiments made by Drs. Bidder and Schmidt for their invaluable work (*“Die Verdauungssäfte”*), it was found that whilst a cat on ordinary diet secreted 0.807 of a gramme per kilogramme of weight hourly, and of solid material 0.045 of a gramme, on very full flesh diet the secretion was in one cat 1.185 gramme of fluid, and 0.062 of a gramme of solid, in another 1.003 of fluid, containing 0.063 of solid. The same fact was fully confirmed by observations also upon dogs and geese, the details of which correspond to the above.

Besides being a cause of anæmia, gastric indigestion may also be its consequence. In the following case, for example, the anæmia was the result of an organic lesion, and the dyspepsia followed it after a considerable interval.

¹ Nasse, *“Commentatio de Bilis quotidie à cane secretâ copiâ,”* &c. Marburg, 1851.

CASE LV.—My first acquaintance with Miss B.—, the daughter of a provincial surgeon, was in June, 1862. She was then 29 years old, and consulted me about a prominence of her eyeballs (exophthalmos) associated with palpitation of the heart. These symptoms she assigned to an attack, six months previously, of cardiac pain, which a physician, consulted by her father as to the state of her chest, said was rheumatic inflammation of the heart. Truly, there remained still an irregularity in the pulse, and a coarse seraping sound at the termination of the first valve sound. I gave her iron and digitalis.

I saw her again, five years afterwards, namely, on June 21st, 1867. She told me that after taking the iron and digitalis a few weeks she had got quite well of the palpitations, and that her eyes had got less prominent. She had remained well till April, 1867, when she began to feel her heart stop suddenly at times, with a sense of dread and a desire to gasp. After this sensation it was apt to palpitate strongly. She should not have minded this much, only she began to suffer much from gastric flatulence and feeling of weight and distension after food. She also tasted her food for long after eating it, especially at night. The catamenia also had become irregular. The uvula was relaxed, and the posterior fauces were red. The eyes also had become a little more prominent lately, but were not nearly so remarkable as in 1862. The pulse intermitted at times, and there was still the same coarse scrape at the end of the first cardiac sound.

I ordered her again iron and digitalis, and added some strychnia. On July 15th she was better, the pulse was more regular, the flatulence and the “lump at the chest,” as she called it, after eating meats was not so troublesome.

Apparently a good deal of this relief was due to the improvements in the weather, and to her having gone up for a time to a lodging at Blackheath; for she described herself (as most patients of a mucous diathesis do) as very sensitive to atmospheric influences.

The essential part of the treatment consists in the administration of tonics; and inasmuch as it appears to me not unlikely that the deficiency of life in albuminous dyspepsia is principally in the nervous system, I am used to expect most benefit from nerve tonics, such as quinine and strychnine. The following case is a good specimen of their use, without iron, oil, or other remedies, which would have been rational enough in view of the anæmia and emaciation, but were not given.

CASE LVI.—J. B. F.—, aged 28, actively engaged in retail business when well enough, was put under my care January 29th, 1867. The history given me by his medical man (Mr. Skaife of Northampton Square) was as follows. The patient had been a great consumer of beer, but always in fair health till the beginning of 1865, when he began to pass uric acid gravel in his urine. This continued a year, when

¹ Case XLIII. in 2d edition.

by dint of careful dieting it was cured. In the spring of 1866 he had a dysenteric diarrhœa, passing in the stools a great quantity of mucus and occasionally blood for many weeks. He was seen several times by the late Dr. Brinton in consultation with Mr. Skaife, and treated by alkalies. This diarrhœa reduced him excessively, so that he lost nearly two stone in weight. He regained his weight, and continued well till December, when he began to cough, and was troubled a good deal with that symptom. In the morning he expectorated transparent mucus with it, but during the day it was dry. Then he began to sweat at nights, and again rapidly to lose weight. So that during the six weeks before I saw him he had lost fifteen pounds, the loss being very often as much as half a pound daily, at which rate it was then going on.

The rapidity of the emaciation drew attention to the urine, which I found, after exertion during the day, clear, full-colored, free from albumen and sugar, and of the specific gravity 1.027.

The chest was narrow and did not expand freely. It was normally resonant. Scattered about, in the upper lobes especially, there were spots in which a full inspiration revealed crackles and occasionally interrupted ("wavy") breath sounds.

There was extreme slowness of digestion, especially of flesh food, and especially at the later periods of the day. Between three and four hours after a meal he would have eructations of nauseous taste and smell like rotten eggs. The quantity taken made no difference; they followed a light snack quite as often as a heavy dinner. His appetite was fair, but yet he could not eat more than two meals a day on account of these eructations. For they were brought on by anything solid or liquid he took after a two o'clock dinner. Supper especially he could never take, though he had tried all sorts of victuals. The attempt kept him awake all night with flatulence upwards and downwards and feverishness. The bowels acted naturally, but the stools were apt to be fetid.

I prescribed for him one-thirtieth of a grain of strychnia and two grains of quinine twice a day, and a bottle of elaret for drink, mixed diet and no tea or supper at present.

On February 6th his weight had become quite stationary, none having been lost since he began the treatment. The specific gravity of the morning urine was 1.022. The night-sweats were much diminished, and he felt stronger altogether. So much so indeed that, visiting a friend's gymnasium on the 4th, he tried his hand at raising a weight by a pulley. This exertion was followed the next day by severe pain between the sternum and left shoulder, which remained at the time of his coming to me. On examination it appeared due to tenderness at the insertions of the pectoral muscle in the ribs.

A fortnight afterwards he had gained six pounds in weight, and on the 8th of March a pound and a half more. On the 25th of March he was stationary in that respect. The night-sweats had diminished to a mere dampness during the second or morning sleep. He was able to take meat, "sometimes fat meat," twice a day, and toasted cheese, without the nidorous eructations which formerly followed.

He was alarmed, it is true, by the appearance in the urine of some fine powdery red deposit, which on examination proved to be uric

acid; and he doubted about the wisdom of continuing the high feeding. But I pointed out how much rather to be chosen it is than the emaciation, which had been really on the verge of carrying him to the grave; and to overcome it ordered some hydrochloric acid instead of citric as a solvent for the quinine.

On July 3d, he brought me a piece of white gritty matter about a quarter the size of a pea, which with another similar fragment he had hawked up from his throat. He came principally to show me this, for he reported himself as feeling perfect in health and strength. On examination of the chest I could detect no abnormal physical signs, and the patient was certainly in excellent condition. We may fairly expect that the calcareous matter expectorated is the last he will see of his tubercles.

In the spring of 1869, F— again began to suffer from cough, and there was a distinct spot of condensed lung in the lower parts of the left upper lobe. He had also some night-sweats. Yet I bade him be of good cheer, for he would be sure to go on well so long as his digestion kept good. And accordingly he expectorated a great quantity of pus, and about every four weeks had an attack of extraordinary cough and threw up some lumps of gritty stuff shaped like dumbbells. But to-day (November 2d, 1869), he is cheerful and well, enjoys life, and is not at all emaciated.

In such cases as the above, one can hardly fail to trace not only the symptoms, but the lesions to the non-assimilation of animal food; still less can one avoid the conclusion that the favorable termination was due to its resumption, and that the resumption was a consequence of the treatment adopted.

The distinction between the consequence of the indigestion of vegetables, flatulence, and that of the indigestion of meat, pain, has been already alluded to in CASE XX. as occurring in the same person. The pain there was said to be "intense"; from the following case we may judge that its intensity depends on its pricking or incisive character. Delusions are often of great service as indications of the nature of the sensations which induce them.

CASE LVII.¹—In October, 1858, Mr. George R—, aged 54, first came under my charge. He was excessively thin and miserable to look at, but I could not discover any organic disease in any part. He said that from a boy he had never been able to eat animal food without great consequent pain. Fluid or liquor made no difference. "Even an egg," he said, caused it, and often brought on cructations of sulphuretted hydrogen, though taken in small quantities. He has often constipation with severe headaches. There was slight pain on pressure of the pyloric region of the epigastrium, a very white (nervous) tongue, and a red nose. What had most troubled him lately was an

¹ Case XXXVIII. in 2d edition.

impression, whenever he attempted to eat meat, that there was a pin in it. He was quite aware that it was a delusion, but still could not shake it off. He had never been a spirit-drinker, nor a great consumer of medical drugs; though like many dyspeptics, he had given homœopathy a trial. I prescribed pepsin, by the use of which he had gained a little weight before he left town. I saw him again the next August, with respect to an eruption of purpura on the legs, and he said his old failings had got much better, though he could not quite shake off the fancy about the pin.

The use of pepsin, or artificial gastric juice, as a remedy, is especially indicated in the indigestion of flesh food. But I think that since its introduction to general use through the ingenious preparation of Dr. Corvisart, it has caused more disappointment than satisfaction. This is because it has been given in unsuitable cases, and because impossibilities have been expected from it.

To do it justice we should understand clearly what position this agent holds in the rational *materia medica*, and then we shall know what good results may be demanded with reasonable hopes of obtaining them. It is an artificial, and therefore a partial, substitute for a natural process. Gastric juice from a healthy animal is mixed with the food, instead of that which the patient's stomach ought to prepare. And it acts in the body just as it would out of the body under the same circumstances of heat and motion. The chewed meat is dissolved by it just as white of egg suspended in a beaker is dissolved by it; and the putrefactive process is arrested by it in the intestinal canal just as the putrefactive process is arrested by it in the laboratory. For you may observe that albumen suspended for twelve hours in pepsin is quite sweet, whereas that soaked for the same time in saliva is most fetid. It is, therefore, a substitute for the natural secretion, and to a certain extent supplies its place.

But like all imitations of nature it is coarse and imperfect. The solvent, instead of being gradually and continuously poured on to the outside of the mass of food, is mixed up in the middle part of it, and acts merely chemically, without any of the mechanical and physiological helps belonging to natural digestion, and consequently soon exhausts its energies. Moreover, the chyme, or albumen prepared for absorption, instead of being wiped off and swept away by the peristaltic motion, remains for some time mixed up with the pepsin, so that the latter is not freed for the solution of a new portion. By this imperfect process only a very small portion of meat can be

dissolved. The small quantity of pepsin in the powder is ridiculously inadequate to the healthy wants of a stomach.

If therefore a patient hopes that by the aid of this article he can get a full and sufficient meal digested at once, he will fail. But let him take about half a mutton chop with the remedy the first day; and if that is digested well, next day a whole chop; but then he has got to the end of his tether, and the digestion of a larger quantity will not be at all assisted by artificial solvents. After a chop has been digested and absorbed twice, or even once, a day by this means for about a week or ten days, the expedient has probably done all the work that can be fairly asked of it, and the stomach has either recovered sufficient energy to digest alone, or will require different remedies to enable it to do so.

Therefore, for the pepsin to be completely successful—first, it must be given only to those who cannot digest half a mutton chop without it; secondly, more than a chop or its equivalent must not be given at once; thirdly, it must not be required to go on alone improving the patient's condition for more than a week or ten days at the most.

But for the time named I advise its being given alone, and the action not interfered with in general by other medicines. Many will really prevent its chemical effect, and all will confuse one's judgment of the advantage gained. In this time it will generally be found that the repugnance of the patient to meat has been overcome, and that a small quantity of it at a time can be relished and digested; the morbid fetor of the stools diminishes, and the flatulence and distress arising during their passage through the bowels cease. A renewed strength and a renewed power of assimilation commences, the sleep becomes more natural, and in short convalescence is commenced. Whether it goes on will depend on the future measures adopted, and not to a continuance of trust in the pepsin.

The cases in which it is really useful are, first, acute fevers, especially those where the nervous system is much prostrated, while at the same time there is an immediate and temporary demand for the removal of tissue. Secondly, more chronic cases where there is pain from even soft animal food. Thirdly, where the stools contain unaltered muscular fibre, and are loose and ragged. In pulmonary consumption also the taking of pepsin for a short time is sometimes rewarded by a diminution of hectic and

night-sweats; while, at the same time, the pulmonary symptoms of cough, dyspnoea, &c., relax, and a step at any rate is taken in the right direction towards the cure of the disease. It is remarkable, too, what a slight improvement in the digestive powers will often enable the patient to take iron and cod-liver oil. These are the mainstays in the treatment of tubercular consumption, and any expedient, however temporary, which will pave the way for the administration, is a great boon.

The difficulty in digesting meat seems very often to arise from a morbid sensibility or from a tissue lesion of the parts which first receives it, and in such cases much relief is afforded by remedies which diminish that sensibility.

CASE LVIII.¹—In February, 1849, Mr. K— came up from Wiltshire to be under my care. His complaint was of vomiting, especially of meat. The morsel seemed to stick at the back of the sternum, to cause a boiling and a gurgling there, and to be rejected, apparently without arriving at the pit of the stomach. He was much reduced in strength and flesh by this enforced abstinence from meat. A fair trial of prussic acid was made without success. But a drachm of bismuth three times a day deadened the morbid sensibility of the part affected so far, that he was able to swallow meat, considered himself cured, and returned home.

Where the diseased structure is in the course of the œsophagus the form in which the albuminous matter is presented to it is of the greatest moment. Reduced to a liquid shape, animal food may be swallowed as easily as vegetable.

CASE LIX.²—Elizabeth S.—, aged 25, died at St. Mary's March 3d, 1852, of an ulcer of the œsophagus perforating the pericardium. She had been in the ward since January 23d, and during that time a great variety of articles of diet had been tried, to find which easiest would pass into the stomach. Meat she could never swallow at all, but eggs beaten up with wine and thick cocoa, she could retain better than even quite fluids. And, indeed, for some time before the accident which caused death, she got a good deal of nutriment.

More common examples of the indigestion of meat are found in convalescents from lowering fevers, where the indigestion is acute and temporary, on which see the remarks under Case XVII. and phthisical patients, such as XXXVII. and XXXVIII. In the last

¹ Case XXXVI. in 2d edition.

² Case XXXVII. in 2d edition.

it is especially noticed that fish was more easily digested than meat, an observation which is quite in accordance with the experience of most attendants on weakly patients. Why is this? The muscular fibre of that class of animals is coarser, larger, and harder than that of the mammalia; we more often find it in the feces undissolved, and with the cross markings visible, than we do the fibres of red-blooded muscles. Certainly the gastric juice has as much difficulty, if not more difficulty, in reducing it to pepsone.

I think the cause will be found to lie in the greater friability of the fibre. I believe the reason of the comparative insolubility of the muscular fibre of meat to be its mechanical form rather than its internal constitution. It remains in a tough mass, while that of cold-blooded animals is easily reducible to a pulp. The most suitable sea-fish for the invalid are those which are most apt to crumble on the dish, which are most difficult to help neatly, such as whiting, haddock, flounders, sole, skate. The worst are the firmest, turbot and cod. Trout and perch are the best afforded by fresh water. The worst are salmon, pike, and eel. A good deal depends on their mode of preparation, to which I am now coming.

Observe the difference made by an alteration merely of adhesiveness and hardness. In Dr. Beaumont's list of the mean time taken to digest various victuals in St. Martin's stomach, it may be seen that while fresh boiled salmon-trout disappeared in one hour and a half (or twice as quick as fresh beef), when salmon was salted and boiled it took four hours (or an hour more than fresh beef). And the same remark will apply to all the articles named in the table, which indeed may thus be taken as representing the capability of the various dishes, not so much to be digested, as to be reduced to a fine pulp, easy to pass through the system.

Not a bad test of the facility of solution of different articles of diet in the alimentary canal, and their subsequent absorption, is afforded by the observation of the rapidity with which they influence the secretion of milk. Nursing-mothers find that in no form does fluid pass so quickly to the breasts as in that of warm gruel; but the supply is thereby rendered watery. Milk in various forms immediately increases both quantity and quality. Boiled fish (traditionally *par excellence* whiting) is next in favor as a galactagogue: while solid meat, though sure, is a slow filler of the mammæ.

The preparation of the dish is of twice the importance as its nutritive contents.

Cookery, therefore, is a matter of prime importance in the care of the sick; for to the eye of the physiologist cookery may be viewed as the art of altering the mechanical structure of food, leaving its chemical constitution alone. A pure cook does not, like the brewer or the baker, produce various decompositions, but simply arranges food in its most convenient form. And this is a matter which is too much neglected by the caterers for invalids.

Our great mistress, nature, does not set an example of this neglect. Observe the preparation of food as arranged for the delicate stomachs of the new-born. It is completely fluid; the various elements are proportioned to the requirements of the body, are intimately mixed together, are offered to the stomach at a moderate temperature, and are then aided in their solution by the lactic acid into which it partially decomposes in the stomach. Let us learn this lesson, and imitate in our rougher way the essentials of the process by which a mixed diet is enabled to be absorbed by a weak alimentary canal. Let us accept the aid offered by art to the conversion of albuminoids into the state of peptone by increasing their softness and accessibility to water, so that the converting juice may gain entrance to every particle as soon as possible. This medical state of the nitrogenous aliments is of tenfold more importance than the quantity of nitrogen they contain. If enveloped in an insoluble layer of their own or other substance, they are in fact as useless as gold locked up in a box, and they had better be absent altogether, than present only to do mischief.

Milk is not only a type, but is also itself the most perfect food for extreme weakness. I have never yet met with a stomach which could not bear it either made into whey, or prevented from coagulating by the admixture of lime-water.¹ Part of it doubtless passes through the stomach unaltered, but the gastric juice will trickle through the pylorus at its leisure after it, and with the intestinal juice will digest the curd in the intestines.

If the milk has been allowed to cool, it should be heated again, rather above its original standard. But it should not be boiled, otherwise the albumen coagulates. Even boiled milk, however, is

¹ The *Liquor Calcis Saccharatus* of the British Pharmacopœia is a very convenient form for keeping the lime ready at hand, but some warm water should be added at the same time. Lime suits the stomach better than soda or potash.

more rapidly chymified than cold milk, according to Dr. Beaumont's table.

Of the different sorts of milk supplied by domestic quadrupeds, common experience seems to assign the greatest degree of digestibility to ass's, next to goat's, and next to cow's. It has seemed to me that at any rate a part of this reputation depends on the various degree of care with which it is treated. The cow's, being collected for ordinary use and on commercial principles, is carefully set by and allowed to cool, perhaps in an already sour vessel; while that which is obtained for the special use of an invalid or infant, is preserved with care, perhaps kept warm and administered fresh. When I have not been able to get ass's milk, I have tried, and with quite as good a success as I should have anticipated from the rarer article, that from a special cow retained for the invalid's use. Most milk-men will make such arrangements, so that the milk may be had warm.

To cow's milk, prepared for the imitation of the requirements of infants deprived of the breast, one-third water should be added, and a teaspoonful of boiled arrowroot to each pint. I cannot see any profit in the addition of sugar, which is sometimes advised. The idea is to copy more closely the human secretion, but it must be remembered that cane-sugar is not sugar-of-milk, and I have known a slight excess of the addition disagree; so it is better avoided.

The use of milk diet in curing chronic complaints, lies in the complete repose, mechanical and physiological, thus afforded to the stomach. It is remarkable how rapidly sometimes an inability to digest food of several months' duration may be cured by this rest, without the help of drugs.

CASE LX.—George C—, aged 36, a coachman, was admitted to St. Mary's July 26th, 1860, having suffered several months from discomfort after meals and tympanites of the belly. He said his appetite was good, but that this discomfort was so great it quite incapacitated him from work.

He was ordered no medicine, but confined to bed for all but a few hours a day, and fed on a diet of bread and three pints of milk daily, guarded from sourness by a pint of lime-water. He reported himself well in six days.

There is a difficulty in private practice in getting such a treatment as this carried out, without sending the patients to some

foreign spa, where they run the risk of being submitted to all sorts of quackeries, and moreover lose the comforts of their own country. I do not know that any one could deserve better of the profession than by the establishment of a farm where the milk treatment could be honestly and rationally carried out as at Gäis in Switzerland, with the addition of English cleanliness and comfort.

Next to milk in facility of digestion among the articles of animal diet comes a well-prepared broth. But there is so great a difference in the quality of it that I think it will not be waste of time to enter a little into detail of the principles which should guide us.

The solubility by the gastric juice of decoctions of animal food depends on several circumstances which modify the advantages accruing from their liquid state. In the first place, heat seems to have an effect in some degree proportioned to the period of application to albumen, rendering it more or less insoluble, at the same time that, to a delicate palate, there is a decided loss of savor. Thus soups and stews which are "kept hot" are wholesome enough during the first few hours, *may* be digested at a railway refreshment room for some hours after, but on the second or third day give the rash stranger beguiled into a Palais Royal two-franc dinner an infallible diarrhœa. (*Probatum est.*) Though finely divided, the minute fragments of muscular fibre seem to be individually rendered insoluble by continued heat.

Then, again, a high temperature too long continued extracts from the meat all its gelatine, an innutritious material which envelops the fragments of fibrin in the stomach and prevents their being acted upon. And this is all the more likely when the cook tries to make the soup what she calls "good" (that is, strong, stiff and gluey) for the invalid.

Again, if the soup is strained and made clear and ornamental, a great deal of the most valuable part of it is removed: the *bouilli*, if not over-boiled, contains the chief constituents wanted as nourishment.

Let not the reader think scorn of the following plan adopted at St. Mary's Hospital for avoiding the above-named evils:—

Recipe for Preparing Beef-Tea and Soup for Invalids.

Make the cook understand that the virtue of beef-tea is to contain all the contents and flavors of lean beef in a dilute form; and

its vices are to be sticky and strong, and to set in too hard a jelly when cold.

When she understands this, let her take half a pound of fresh-killed beef for every pint of tea she wants, and carefully remove all fat, sinew, veins, and bone. Let it be cut up into pieces under an inch square, and set to soak for twelve hours in one-third of the water required to be made into tea. Then let it be taken out, and simmered for three hours in the remaining two-thirds of water, the quantity lost by evaporation being replaced from time to time. The boiling liquor is then to be poured on the cold liquor in which the meat was soaked. The solid meat is to be dried, pounded in a mortar, and minced so as to cut up all strings in it, and mixed with the liquid.

When the beef-tea is made daily, it is convenient to use one day's boiled meat for the next day's tea, as thus it has time to dry and is easiest pounded.

Some persons find it more palatable for a clove of garlic being rubbed on the spoon with which the whole is stirred. I prefer a bit of celery heated in it. Good soup is that which is most like this beef-tea, and is a very digestible article; bad soup that which least resembles it, and is to be avoided as poison.

What I have said against an over-long application of heat refers equally to the second dressing of meat. It is always thereby rendered less digestible by the hardening of the fibrin and albumen, and concentration of the gelatine. The same dictum, however, does not apply to fish; the harder sorts of which, such as turbot, are all the better for being warmed up again, if kept moist. The usual boiling seems insufficient for them.

Close to soup in digestibility come the softer animal tissues, such as sweetbread, brains, tripe, pig's and lamb's feet. Birds and fish are digestible just in proportion to their softness, and that must depend not only on the individual specimen, but also on the mode of preparation. As a rule, boiling is the preferable method of cookery for invalids, especially in the case of birds and fish. For birds when roasted, and still more when baked, are apt to be too much dried up; and fish fried is impregnated with an empyreumatic, half rancid grease, against which a weak stomach rebels.

I have sometimes found toasted cheese borne by a stomach to which meat gave pain. The cheese must be quite new, and toasted very soft, without the formation of any skin on the surface. The

addition of a little fresh cream while it is toasting makes it still softer and more palatable.

The solidity of the patient's food should be gradually increased from day to day, as he is able to bear it. I have found it a very suggestive plan to construct for consultation, and to tempt the appetite by variety, a table of this sort, which I call a

Ladder of meat-diet for invalids.

Whey.	Scotch broth.
Milk and lime-water.	Turtle soup.
Milk and water.	Sweetbread. ¹
Plain milk.	Boiled fish, especially water soajee.
Milk and sago.	Boiled partridge, or boiled chicken.
Milky rice-pudding.	Mutton chop, grilled in the air, and without fat.
Beef-tea.	Roast joint of mutton.
Plain mutton broth or chicken broth.	

Roast joint of mutton is the Promised Land of the convalescent: when he has got to that it is a matter of time and strengthening the stomach by occasional tonics, for him to arrive at the digestion of anything within the scope of his birthright. And even if he has to stop at roast joint of mutton, he will stop at a very good thing.

A chemical view of the process of roasting shows it to fulfil all the indications of perfect cookery for solid matter. The heat radiated from the open range coagulates the outer layer of albumen, and thus the exit of that still fluid is prevented, and it becomes solidified very slowly, if at all. The areolar tissue which unites the muscular fibres is converted by gradual heat into gelatine,² and is retained in the centre of the mass in a form ready for solution. At the same time, the fibrine and albumen take on, according to

¹ I hope Dr. Pavy will pardon my correcting an error in his usually correct work on "Digestion and its Disorders." He has confounded the pancreas with sweetbread. Now sweetbread is the thymus gland of the calf, a much superior article to the stomach-bread or pancreas of the ox, which is stringy, full of veins, and quite an unfit dish for an invalid. To sell this for sweetbread is dishonest, as it is of much lower value, being the perquisite of the slaughterer.

² Not, however, the sarcolemma, which an experiment of Professor Kölliker's seems to remove from the class of substances yielding gelatine. See Kölliker's "Mikros. Anat.," vol. ii. p. 250.

Dr. Mulder,¹ a form more highly oxidized, and, especially in the case of the former, more capable of solution in water. The fat also is melted out of the fat-cells, and is partially combined with the alkali from the serum of the blood. Thus the external layer of albumen becomes a sort of case, which keeps together the important parts of the dish till they have undergone the desirable modification by slow heat, a case, however, permeable in some degree by the oxygen of the free surrounding air, so that most of the empyreumatic oils and products of dry distillation are carried off. This is no loss either to our stomachs or our palates. If acetic acid be generated it is probably carried off, and if not carried off it is neutralized by the alkaline carbonates, as certainly roast meat is not acid to test-paper if quite fresh. The little that may remain probably renders the muscular fibre more soluble.

Roasting, therefore, is as scientific and wholesome, and, *therefore, as economical* a process as it is a palatable one, and is well worth the extra expenditure of fuel which is entailed. Baking can never take the place, for it concentrates in the meat all the empyreumatic products of slow combustion, producing a result as nauseous as it is noxious.

Frying also is apt to prove an indigestible dish, from the liability of the grease used to become rancid, and empyreumas to be generated by the semi-combustion.

Rapid boiling may effect in some minor degree the case-hardening of the meat above described, but the interior albumen seems after this process also more solid and less digestible.

Rapid boiling suits small articles, or very light meat, such as fowls and fish. The latter especially is best boiled, seeing it cannot be roasted, and is not so wholesome when fried.

Slow boiling at a low temperature makes, it is true, a nourishing soup, but converts the muscular fibre into a mass of hard strings, which, eaten or not eaten, are in nine cases out of ten equally wasted. The relics to be found in the feces exhibit the transverse striæ of the original, quite unaffected by their intestinal journey. The only way to make the mass digestible is to beat the whole up in a mortar to a fine pulp and mix with the soup, as prescribed above in the recipe for beef-tea.

Of all red muscular fibre that of mutton is the most wholesome,

¹ Quoted in Moleschott's "Diätetik," p. 450.

because it is the closest grained, most friable, and least infiltrated with fat. We should, therefore, in choosing our meat, seek for that which best emulates these desirable qualities. Red deer venison is perhaps the nearest, but fallow deer is either too fat or else tough for invalids. Solid beef can only be managed by a perfect stomach. It is not nearly so soluble, but it makes a variety.

Among nutritious food oysters should not be neglected. They are best eaten raw, for in this state they are sure to be fresh, and moreover they carry their own pepsin for their digestion. Cooking destroys this, and also toughens them.

The quantity of albuminous food may be gradually increased from day to day; in proportion to the quantity of exercise taken; but the invalid's plate should never be overloaded. The look of more than he can eat sets him against it. Moreover judicious times for pressing food should be chosen. A cup of beef-tea on going to sleep can often be borne, when ordinary meals excite disgust.

In all things let nature be followed and the natural instincts and appetites respected.

SECTION III.

Indigestion of Fat.

There are two senses in which we may speak of the indigestion of fat: it may cause inconvenience, or it may be defective. The first is the most common, indeed it is an almost expected accompaniment of slow digestion for the fermentation to extend itself to the fatty matters present and to develop butyric acid, causing rancid eructations and a greater amount of pain in the œsophagus, or heartburn, than most other products of decomposition. All those whose meals are apt to lie heavy on their stomach avoid any excess of fat from experience of its spiteful nature. Yet in the greater number of these persons sufficient fat is digested to keep up the nutrition of that tissue in the body. Nay, patients with indigestion of starch and albumen will sometimes even get obese, especially if large eaters. Several specimens may be found in this volume.

There is another class of cases of a more serious nature, in which fat does not indeed cause any remarkable inconvenience, but is not assimilated. The body wastes away, fatally wastes away in many

cases, not because of the destruction of fat being increased, but because of its renewal being arrested.

Instances of the first sort, namely, where there is a painful but yet sufficient digestion, are frequent, which seem to form a kind of transition between the indigestion of adipose tissue and of muscular fibre. For example, Case LV. found fat meat more difficult to digest than lean, for he noticed in his convalescence that he was able to take meat, "sometimes fat meat."

CASE LXI.—Mrs. W—, a lady between 50 and 60, told me that she had never from a child been able to eat roast beef without suffering afterwards from heartburn. On cross examination I made out that the exception taken by the stomach extended to rich dishes, or those cooked a second time with sauce, to melted butter, to the gravy of loin of mutton, and other dishes which I now forget, while mutton in all joints and beef-steak were not found a difficult diet. It then struck me that the difference between the joints of beef usually roasted and other *pieces de resistance* lies in the infiltration of the bundles of muscular fibres by fat. Good roasting beef is usually minutely "streaky," which is not the case with steaks or with mutton.

Mrs. W. looked thin, but not morbidly so.

It is possible that part of the generally admitted digestibility of fish may be due to the absence of fat in the muscles.

In other patients there is found a disgust to fat and to all that contains it so intense as to induce nausea when the attempt is made to force the inclination. Here great emaciation must follow, indeed greater emaciation than in any other disease, emaciation such as in any other disease, with any deficiency of the lungs, liver, or other vital viscera, would necessarily cause death.

It may be remarked that the nausea not unfrequently takes the form of repugnance to meat, for all flesh is scented by its own peculiar adipose tissue, and owes to that its distinctive odor, which is unavoidably associated in the mind of the patient with the meat itself.

CASE LXII.¹—Miss A. M—, aged 20, was first placed under my care November 3d, 1865. She was excessively emaciated, the cheeks were hollow, the abdomen fell in so that the first thing you felt on pressing it was the spine, and the haunch-bones stuck up like the arms of a chair. The space made dull by the liver on percussion was very small. The skin of the body was harsh and dry. The bowels were excessively costive, not having acted for years without strong purga-

¹ Case XLV. in 2d edition.

tives or laxative enemata. The mind was unnaturally quiet and retiring; she avoided speaking of her ailments, and would go and cry in solitude if pestered about them. She expressed an excessive repugnance to animal food, especially if moist or savory. The only chance of getting her to eat a bit of meat was to have it so dried up that most people would refuse it. There was no hallucination or morbid fancy about her diet, but she persisted that she had severe headaches and pain in the abdomen after it, till such time as it was removed by action of the bowels. Cod-liver oil, which, naturally, a medical man had ordered for her, had caused such excessive nausea and vomiting, that it was impossible to persist in it. She had a craving for alcoholic stimulants. With all her atrophy the color had not left her cheeks, the lips were full and red, and she retained a peculiar delicate style of beauty like a hectic consumptive. The urine, too, was of a natural quantity, color, and smell, and of the mean specific gravity of 1.018. So there was naught of what could be called anæmia. The muscles, too, were well nourished and innervated, so that she could walk and would walk, if permitted, more than was prudent; and it was after these exertions that she used to urgently ask for wine. The heart and lungs whose sounds and motions the skeleton condition of the chest exhibited with anatomical distinctness, were quite healthy.

The only anæmia was amenorrhœa, which had existed for eight months.

The history was derived from a most kind and observant step-mother. It appeared that Miss M—and her sisters had, during their father's widowhood, been under the care of a horrible French school-mistress, who with a sort of insane wickedness conceived a hatred to the family, and actually tried to starve them to death to spite the father. One died, but the circumstances were so painful, that I could not cross-examine into particulars. The elder ones are alive and hearty. And this one seemed to get quite strong. She was plump, and the catamenia came on at sixteen. But soon after that she began to fall into her present condition, and the catamenia ceased, as above stated, gradually.

She had tried vegetable tonics, iron, mineral acids, baths, hydropathic packing, homœopathic remedies, &c. &c., without consequent benefit or injury, so far as I could discover. Also, in passing from one hand to another, usually the purgatives were increased in intensity and variety. Her father, a physician, was growing sceptical of his profession.

I commenced treatment by leaving off all purgatives and giving her, unknown to herself, opium in half-grain doses, with a view of stopping the pain, which she said she always had when the bowels were not open. I took it to be an abnormal sensibility of the intestinal canal, which would not allow the requisite food to lie there a sufficient time. In such a case the orthodox "bowels open once a day" is a diarrhœa. This plan was successful, for with the exception of warm-water enemata twice a week during the winter, she has taken no purgatives since, and now the bowels are open of their own accord, and the opium pills are left off.

I gave her pepsin, which seemed quite inert; and then strychnine,

which brought back the pain and curiously prostrated her. It was bad practice. I found also that the disturbance which it induced put the use of cod-liver-oil out of the question.

On January 17th, I began to educate her gradually to use Dobell's pancreatic emulsion, and she has continued to take from one to three doses daily ever since. I hear of her from time to time as slowly improving; any acquaintances who have not seen her for several weeks, invariably remark on her gain of flesh. The appetite is better, and the bowels open naturally three or four times a week. (July 6th, 1866.) She continued taking the pancreatic emulsion with great advantage at least once a day all the next fourteen months. Then she left it off and gradually fell ill again, so that in January, 1868, I again heard of her as emaciated, low spirited, and with a fondness for dry crusts and strong tea.

This is the first time I have mentioned the use of pancreatic emulsion; so I will pause a few minutes to say what I think of it. It is well known to be simply an animal fat mixed with a certain quantity of the pancreatic juice of the pig. By this the fat is partially emulsified, and according to the microscopic examinations of Dr. Bernard repeated by Dr. Dobell, emulsified into finer globules than with other reagents. What, however, is of more importance, is that they do not reunite, but the emulsion remains complete after exposure to the action of gastric juice and hydrochloric acid.¹ It is therefore capable of passing through the stomach unchanged, and being supplied in a finely-divided state to the intestinal absorbents. Where then the deficiency in the assimilation of fat, depends on a deficiency in the secretions which emulsify it, this fat, ready prepared for absorption, supplies directly an obvious want. It is an easily-digested oleaginous material, and, moreover, has not the nauseous character which a mixture made with the other main emulsifying agent, bile, would be possessed of.

One may perhaps be asked why we should make the remedy so bulky, and why not give pancreatin in the same way as we give pepsin. The impediments to this course is that pancreatin would be destroyed in the stomach as pancreatin and simply digested as food. As a solvent, it would be wasted.

Where then cod-liver oil disagrees, or is for other reasons objected to, this preparation may fairly take its place. It is so far better than cod-liver oil, in that it carries the agent of its own solution along with it. But I hope we shall be mercifully economical in our use of it, for clearly only a very limited supply can

¹ Dobell on Tuberculosis, p. 56, and *Archives Générales de Médecine*, Aug., 1849.

be properly made. As the animal matter is of course used raw, the most prudish care for purity is essential, and the very idea of pancreatic emulsion made from an unhealthy pig is enough to cause a panic against it. Even when beautifully prepared, as it now is, the form will sometimes cause disgust. A consumptive friend of mine, to whom I ordered it as a substitute for cod-liver oil, declared that she wouldn't take a third dose "of that horrible pomatum, to save her life."

A condition made evident by the non-assimilation of fat, may arise out of mental conditions. Lunatics, in that uneasy transition stage in which we non-specialists usually see them, are almost always thin, sometimes remarkably emaciated. Whereas, on the other hand, when they get into a hopeless, confirmed condition, I am informed it is the rule for them to fatten up again. A gentleman, of large experience in asylums, tells me that he often uses this fact as an aid to prognosis.

Without actual mental disease, an overstrain of the mind may act in the same way, especially in young girls of delicately balanced and conscientious minds, of which the following case is an example:—

CASE LXIII.¹—Miss A. D—had an ambitious, intellectual governess, who, finding her pupil very retentive of learning and persevering, from fourteen to fifteen pressed her forwards in her education with great energy. The nutrition of the mind went on, that of the body was stayed; she was very sharp and learned, but she ceased to grow. The menses appeared for once, and never again. It was also observed that she loathed her food, and anything "rich" (that is, greasy) made her peculiarly uncomfortable afterwards, so that she sometimes threw it up. Her temper became queer and her conscience fanciful, and she distressed herself heedlessly about her failing powers of observation and work. It was noticed, too, that sometimes, in reading, a kind of cataleptic stiffness would come over her; she stopped for a minute or so, as if a parenthesis was snipped out of existence, and then went on with her employment, unconscious for the most part that anything out of the way had happened.

By rest and quiet treatment her wish for food returned, but still she got more and more emaciated, so that at seventeen Dr. Gibbs Blake, under whose care she was, desired my assistance in the case. I found her on March 6th last, presenting an appearance very similar in many respects to that of the last case. The tongue, lips, and cheeks were fully colored; the pulse was firm and rather slow, only 55 when asleep. The temperature of the body at night was 96° Fahr. The

¹ Case XLVII. in 2d edition.

heart and lungs were perfectly normal. The urine was clear, of the specific gravity from 1.023 to 1.026. The bowels were open daily. But the skin was harsh and dry, the emaciation was extreme; and the mammae, which at fifteen and sixteen began to swell, had completely disappeared. The menses had not again shown, though the pudenda were in every other respect developed in proportion to her time of life.

I ordered her the pancreatic emulsion, prepared according to Dr. Dobell's plan, in milk. She took it well and profited remarkably, so that when I sent for her to come again to London, in the middle of April, I hesitated at first to shake hands, supposing it to have been a sister of my patient that I saw. The reason for bringing her up to London again was, however, this—she caught a catarrhal cold, it flew to her stomach, the emulsion nauseated her; and yet she persisted in swallowing it with her innate perseverance. Suddenly, while engaged in playing a round game of cards, she went off into an epileptic fit, vomited a quantity of bile, and next morning knew nothing of what had taken place.

The emulsion had done its work, and was beginning to do mischief. It has been left off, and I have heard of no more *contre-temps*.

The dryness and apparently dead dirty aspect of the skin has been noticed in several of the last cases of non assimilation of fat. The cutaneous imperfection sometimes goes farther and exhibits itself in the shape of eruptions.

CASE LXIV.¹—Miss D'O—aged 24, has never been plump or strong since menstruation was first established. She is excessively thin, her ribs sticking out, and her bust flat, enabling the normal condition of the lungs and heart to be easily proved. She is energetic, pretty, and lively, and her bright eyes and red lips are much admired. The specific gravity of the urine is 1.023, and it deposits lithates on cooling. The bowels are regular. Rich food is disagreeable to her, and cream indigestible, so that she is accused of being fanciful in her diet. Latterly she has suffered great inconvenience from an eruption of an eczematous² character on her forehead and skin, and thinks she is thinner and thinner. She gets on well enough when living quite quiet, but animal and spiritual life enjoyed for a season, throw her back on each occasion, and she does not pick up her health again. A trip to Italy, with its numerous temptations to bodily and mental exertion, was the last blow. She had taken tonics and homœopathic remedies.

I gave her the pancreatic emulsion, which is working apparent benefit.

¹ Case XLVIII. in 2d edition.

² *Eczema* = "a superficial formation, consisting mainly of serum from the denuded consecutive tissue of the corium, without external existing causes." I do not take this as a dogmatic definition, for dermatologists are a difficult class to please, but simply to explain what I myself mean by the word.

In a lecture on pulmonary consumption, in 1862,¹ I made some observations on the connection between that disease and cutaneous degeneration, apropos of a case of impetigo of the finger-nails. Perhaps the mal-assimilation of fat has something to do with it.

In all the foregoing cases, we may observe that the deficiency in the assimilation of fat made no sign before puberty. Up to that period apparently enough had been taken in for the ordinary purposes of life, but after it the supply was insufficient, and the failure in health followed accordingly.

What has puberty to do with fat? Certainly something: in normal health, girls before the change naturally dislike fat, but afterwards take to it instinctively. Under ordinary circumstances and with the restraints which society teaches us to lay on our appetites, especially in youth, the instincts are scarcely made apparent; but accidental occurrences will sometimes exhibit their existence in a somewhat unsuspected manner. The following anecdote shows what a strongly marked line can be drawn between the child and the woman in their relish for food, and how full development is not exhibited in this or that organ exclusively, but in the whole person simultaneously. It was narrated to me by the chief actor.

CASE LXV.²—In 1825 or '26, the late Mr. Ridout, a much-respected surgeon in the neighborhood of Russell Square, was summoned to St. Albans, to see the apprentices, who, to the number of sixty, were employed in the Abbey silk-mills at that place. A great number of the inmates of the house were suffering from a variety of obscure symptoms of various degrees of intensity. On examination of the invalids, he arrived at the suspicion that their illness depended on the poison of lead, and advised their being treated accordingly. In the meantime, specimens of the water were reserved for analysis, the milk-vessels, made of crockery, were examined for the metal in question; but nothing deleterious was found, nor had any part of the building been recently painted. Still fresh cases kept occurring, and those who had recovered relapsed, and had colic a second time. The cause of the evil was evidently permanent.

Now the surgeon in ordinary attendance had been loath to agree to the diagnosis which assigned the symptoms to lead-poison, from some connection which seemed to exist between the occurrence of the disorder and the uterine functions. Not only were the catamenia arrested in those attacked, but it was observed, that all the girls

¹ "Lectures chiefly Clinical," p. 280 of 4th edition.

² Case XLVI. in 2d edition.

under puberty had wholly escaped, while all who had ever menstruated, from the maiden of fourteen to the matron superintendent, were affected in various degrees.

The search was still pursued for any possible avenue by which the lead could have entered, and the mystery was at last solved on probing to the bottom of a salting trough in which fat pork was kept. It was found to be lined with the deleterious metal, and thus to have impregnated the outside at least of each joint with the poisonous carbonate. Inquiries were then made of the apprentices themselves for some link which would connect this discovery with the anomalous escape of some parties, and injury to others.

It appeared that this fat pork was placed on the table three times a week, but never alone, being always accompanied by some fresh meat, and the girls were at liberty to take which they liked. Now, on questioning them, it came out, though it had not been previously observed, that the older apprentices and adults always ate pork, while the little girls—all, that is, under puberty—invariably chose mutton. The disease, which had attacked the one and spared the others, was a test of the truth of the statements which they had made.

The newly acquired desire for fat meat at the age of puberty is an interesting fact. It is more observable in the female sex, from the deeper influence on the vital actions of the whole individual which that change exerts in them, but traces of the same instinct may be seen in boys. How shall we connect this fact with what we know of the other corporeal functions of this period? The mere growth of the body in size is much the same before and shortly after puberty. Nor is it easy to guess what the evacuation of the catamenia can have to do with oleaginous matters, seeing that they contain none.

There is, however, a change that takes place in the excretion of one organ, which modern chemistry has taught us to ally with the chemical changes of all carboniferous substances in a strict and peculiar manner. We may look to the lungs for assistance in explaining the circumstances before us.

It appears from the researches of MM. Andral and Gavarret,¹ that the excretion of carbonic acid by the lung increases in quantity during childhood very exactly in proportion to growth, the augmentation steadily progressing up to the period of puberty. In boys it would seem but little affected by that new function; but with girls the case is entirely different; there the occurrence of menstruation puts a complete stop to the increase in the amount of carbon thus passing away, and sometimes even causes it to

¹ "Annales de Chimie et de Phys.," vol. viii. p. 129.

make a retrograde movement. Thus a child of thirteen years of age exhaled 6.3 grammes of carbon hourly ; a girl of fifteen years and a half, who had not menstruated, 7.1 grammes ; while another, also of fifteen years and a half, but in whom the flow was regular, gave out only 6.3, the same quantity as the one two years and a half younger. The same observation was the result of experiments on healthy women of twenty-six, thirty-two, and even forty-five years of age, who still continued to experience their monthly evacuations. After the change of life has occurred, the exhalation of carbonic acid begins to increase again, and in elderly women is much the same as in elderly men. What is still more curious is, that when from either pregnancy or illness the catamenia are stopped, then temporarily the pulmonary excretion is augmented, and occupies a vicarious position in respect to the other functions.

The uterus, then, and vital actions which are expressed by it, play an important part in the decomposition of carbon in the system. When we reflect on this, changes in the digestion which supply that carbon and changes in the instincts which supply the digestion will not surprise us, when they accompany the radical alteration which the generative organs experience at puberty.¹

This physiological digression has been so long that it risks withdrawing us from the subject in hand. The chief practical point of remark is the importance at that critical period in woman's life, of watching over the digestive organs, especially in respect of their appropriation of fat, then so eminently necessary.

The following case is one of a class which has attracted a good deal of attention, from having contributed in an important degree to our knowledge of the physiology of intestinal digestion.

CASE LXVI.—In the summer of 1860, a middle-aged woman was admitted into St. Mary's, and was, for about six weeks, under the care of Dr. Sieveking for pulmonary consumption. She died of emaciation and weakness in the ordinary way, and there was nothing noteworthy about the case, except the peculiar appearance of the stools. She had no diarrhœa, and passed, only once or twice a day, a small quantity of solid or semi-solid feculent matter. But, at the same time, usually afterwards, she evacuated *per anum* one, two, or even three ounces of clear, yellow, semi-solid, oily matter, resembling butter which has been melted and grown cold. It floated in water, was soluble in ether, and smelt like rancid butter after keeping a little

¹ "Gulstonian Lectures," by the Author, in the "Lancet" for 1850.

time. She passed this substance whether she was taking cod-liver or not, and continued to do so up to her death.

At the *post-mortem* examination, the pancreas was, indeed, atrophied, but so were all the other organs visible.

I am sorry to say that this case is recorded from memory. I have sought in vain for the notes of it.

In 1832 Dr. Bright brought together three cases of the association of fatty stools with lesions destructive of the liver and pancreas, and with his usual shrewdness remarking that hepatic diseases alone do not cause this singular phenomenon in the alvine excretion, he connected it with the loss of the services of the pancreas.¹ But the rarity with which this organ is destructively affected impeded the advance of its pathology, and it was left to Dr. Bernard fourteen or fifteen years later to show by experiment on an animal that obstruction of the pancreas made the stools fatty.

Perhaps, however, Dr. Bernard has been hasty in his conclusions, for the experiments of Drs. Bidder and Schmidt² and of their pupil Lenz³ have attacked the position in which the pancreas was placed by Bernard,⁴ and lead to the impression that its power is equalled if not surpassed by the liver in the digestion of fat.

Grounding an argument upon the physiological deductions from these experiments and observations, Dr. Dobell has ingeniously attributed to a deficiency of the pancreatic functions the crime of giving occasion for the tubercular diathesis.

The hypothesis may be briefly stated as follows: Tuberculosis is due to defect in the action of the pancreas on the fat taken as food (especially the solid fat). The supply of properly prepared fat is cut off from the blood: 1. By the fats not being brought into a proper condition by the pancreas; 2. By loss of absorbing power in the small intestine, due to the contact of unhealthy pancreatic juice and of defectively prepared food with its mucous membrane. Thus the blood becomes deficiently and defectively

¹ Medico-Chirurgical Transactions, vol. xviii. A case also is added by Mr. Lloyd.

² "Die Verdauungssäfte," pp. 241-259.

³ Lenz, "De Adipis Concoctione et Absorptione." Dorpati, 1850.

⁴ "Archives Générales de Médecine," 1849. (I excuse myself from here repeating the arguments and experiments, inasmuch as I detailed them at some length in "Digestion and its Derangements," and they have also been repeated by Dr. Pavy in his recent work.)

supplied with fat elements from the food; is unable to afford those required for direct combustion; does not replace those taken up during interstitial nutrition; but, on the contrary, takes up more to compensate the deficient supply from the food. This having gone on up to a certain point, the fat elements of the albuminoid tissues are seized upon, and these tissues are minutely disintegrated in the process. This disintegrated albuminoid tissue is nascent tubercle, and this process of disintegration is tuberculization.¹

The weak points in this hypothesis are to my mind these: first, the strong doubt whether waste of fat, at least if it is declared by emaciation, does really precede tuberculosis; and, secondly, the absence of post-mortem evidence to the defect of the pancreatic function, which it is hard to imagine could last many years without leaving its traces in a visible lesion or atrophy in a good many instances of consumption.

Could observation make it a little stronger, one would be very glad to accept the above-named theory, inasmuch as it offers such a convenient explanation of the great power, possessed by a duly absorbed fat, of arresting not only the ravages, but the progress of tubercle. And that it does not only in the earlier stages, but even when a considerable portion of the viscera has been destroyed by the presence in them of this morbid material, and when the injury to life is exhibited in the wasting of the even uninjured tissues which gives its name to the disease, Phthisis.

I presume no one will question that in tubercular consumption the body wastes away, not because of the destruction of fat being increased, but because of its renewal being arrested. And, without adopting any doubtful theory, we may say that its renewal is arrested primarily and directly by any disease which affects the *ilia*, such as diarrhoea especially, because the *ilia* are the immediate instruments of its absorption; secondarily by the inefficiency of the secretions which assist in its solution and alkalization, such as the pancreatic juice and bile; in a less degree by the colonic or fecal viscera; and by the other organs of the body just in proportion as they influence indirectly the above-named functions.

I will lighten these lengthily, and to some probably platitudinous, remarks by citing cases which may be considered as representa-

¹ Dobell on Tuberculosis.

tive of the most common phases in which tubercular phthisis presents itself to our care.

CASE LXVII.¹—In September, 1857, I was called to see Mrs. B—, aged 45, reported as in an incipient stage of consumption. There were old scars in her neck, and apparently a moderate deposit of tubercle in both pulmonary apices, indicated by bronchial breathing under each clavicle, and by sibilant, occasionally crepitant râles on the left side. This did not seem to account for the emaciation, and anatomically justified the diagnosis of incipency. But it appeared that she had tried to take cod-liver oil and failed; and that the cause of the failure was its induction of diarrhœa; so that the more she took the thinner she got. Also, after every meal which included the smallest quantity of any fatty matter, diarrhœa followed. The stools were like pea-soup, and when she was taking the cod-liver oil, drops of the oil used to be seen floating on the surface of them. Attempts to change this condition failed, and she never got any better, I know, though I did not attend her to the last.

CASE LXVIII.²—Ellen L—, an ill-starred orange girl in her 19th year, left alone in the world from all her relations having died of consumption, came into St. Mary's Hospital, January 8th, 1857, in the third stage of the same disease. Indeed she had been an invalid long enough for the catamenia never to have appeared, being probably arrested by her ill health. She was a flabby-faced strumous-looking girl with grayish brown eyes, much emaciated, and with the finger nails curved into claws. She had much cough, with blood-tinged expectoration, for which she had been in several hospitals, always with relief. The upper part of the left ribs were flattened, and there was that large erepitation and metallic bubbling to be heard which distinguishes a vomica, while at the right apex there was fine crepitation with tubular breathing. She rested but little, and the lips were livid from the imperfect aëration of the blood in the obstructed pulmonary tissue.

She was anxious to come into the hospital, she said, because she liked cod-liver oil, took it "with a relish," and thought she should get better on it. Her bowels were always costive.

She certainly did improve on cod-liver oil and quinine. Her hectic abated, she acquired a good appetite; the pulse grew fuller, and she lost her cough. So at her own request she returned to her occupation on February 16th.

CASE LXIX.³—In April, 1858, I met in consultation Dr. C. B. Williams on the case of Alice C—, aged 14, who we made out to have a small amount of tubercular disease at the apex of one lung, and in the bronchial glands adjoining. She had a great deal of cough, and was much emaciated. Up to that time she had been most carefully attended to and actively treated. Blisters, iodine, iron, tonics, had been assiduously administered. Having made our diagnosis, we wrote out a prescription of numerous materials in accordance with the or-

¹ Case XXXIX. in 2d edition.

² Case XL. in 2d edition.

³ Case XLI. in 2d edition.

thopraxy of the day. During the performance of this duty, I remembered that I had seen our patient (who was the daughter of an intimate friend) at luncheon eating some fat mutton, and it struck me that this capability had never received full play. When, then, the prescription was written I proposed that it should be put away for six weeks, and the patient have no medicine at all, except whatever she fancied to eat. It was a struggle to waste a good prescription, but yet that was agreed to, and in the six weeks so much progress was made by change of air, and scene, and diet, that the father declared that had she taken three homœopathic globules, to those three globules he could not but have attributed the cure. This was ten years ago, the patient has since been a sea voyage, and is careful during the winter; the air does not enter her left apex so well as the right, and she is shortish of breath; but she runs, and rides, and hunts, and dances, and has plenty of flesh on her bones.

CASE LXX.¹—Just after Lady-day, 1861, Harriet B—, a maiden lady, aged 30, whose “father and mother had both died of decline,” was placed under my care by Dr. Buckell of Chichester. She had evidence of a small focus of tubercle in the apex of the left lung, producing pain, dulness, and crepitation (from the partial condensation of the lung round it), but no marked pulmonary ailment. I thought that the quantity of tubercle was slowly increasing from week to week. What she complained of, however, was emaciation and diarrhœa, accompanied by the passage of pus and sometimes streaks of blood in the mucous feces. She was soon relieved of this by appropriate remedies; and with a store of hæmatoxylum and copper was able to go on a long summer visit to some country cousins. I heard of her as going on well, and did not expect to see her again, or to make her case available for science. But as she returned through London in September, proclaiming herself quite stout and hearty, I had an opportunity of examining her chest again. I could then detect by neither percussion nor the ear any disease at all in the lungs. The pulmonary tubercle had become dormant. Two years afterwards I met her walking briskly through the streets of London, looking plump and well.

CASE LXXI.—Mr. Aveling, of Sheffield, gave me the following history of a manufacturer, aged 33, whom he sent to consult me, April 30th, 1867. The patient had eleven years previously suffered from cough, for which he had been sent to Devonshire, recovered and continued well till 1866. Early in that year he got an abscess in the rectum, which turned to fistula in ano and was operated upon. As the cold weather came on in the autumn, he began to suffer much from cough, he grew thin and had night perspirations. In the early spring of 1867, he went to Hastings, where his cough got better, but he does not appear to have improved much in other respects. His weight had been reduced during the cold months from 11 stone 12 pounds to 10 stone 6 pounds, that is nearly a quarter of a hundred weight of loss, and he could hardly drag his limbs about, so languid and exhausted was he.

¹ Case XLII. in 2d edition.

One would call it a case of advanced consumption. Yet, on examining the chest, there were to be found physical signs of by no means such an amount of lesion as the history and symptoms would lead one to expect. Beneath the right clavicle there was interrupted inspiration and bronchophony, and the motion of the upper ribs was not so free as on the other side. But that was all, and the signs of lesion occupied scarce half a quarter of the pulmonary area. It was just what might be expected as the remains of the illness eleven years before.

The most serious symptoms were connected with the digestive organs. A quarter of an hour after each meal, a grinding pain about the navel would come on, accompanied by rumblings and gurglings, sometimes followed by a liquid stool, and thereby relieved, sometimes passing away more slowly without a stool. Every fourth day or so, he would have diarrhœa, that is to say, liquid stools occurring many times a day, without pain, independent of the ingestion of food. This had gone on more or less all the winter, and was rather worse lately at Hastings.

I ordered him to take twice a day two teaspoonfuls of cod-liver oil, washed down with a draught containing two grains of quinine and six drops of laudanum; also the following pill every night:—

R.—*Cupri sulphatis*, gr. $\frac{1}{3}$,
Opii, gr. $\frac{1}{2}$.

On May 6th he came to report he had no pain or diarrhœa since he began the medicine. Still, however, he perspired at night and felt very weak. His pulse was 110, and the tongue was furred.

I told him to take his draught three times a day, with three teaspoonfuls of cod-liver oil, to go to the Hebrides for the summer, and spend his time in an open boat, resuming the pills in case the diarrhœa should return.

I received from him in June an account of gradually increasing strength, and a cessation of the nocturnal sweats. An occasional threatening of diarrhœa was checked by a single copper pill.

In September I examined his chest, and found a diminution of dulness in the pulmonary tissue, indeed I could not make out dulness at all; but the interrupted respiration, jerking breath-sounds, and exaggerated transmission of heart-sounds, showed the remains of old lesion. In consultation with Mr. Aveling, I advised his spending the succeeding winter in the South of France.

Observe the difference between these patients (not picked specimens, but such as are constantly occurring), and observe wherein it lies. In the power of assimilating fat. The first had not the power, and lost her life with enough healthy lung in her chest to have lasted her for many years; the second had the power in extraordinary force, so that she was able to take an excessive quantity of oleaginous nutriment, and so to bear up for a time against a most formidable amount of softening destructive tubercle; the third had not, indeed, any extraordinary power, but she had less

amount of disease to bear, and she bore it; the fourth and fifth had lost the power, but regained it, and with it overcame the morbid diathesis.

It is truly by aid of the digestive viscera alone that consumption can be curable. Medicines addressed to other parts may be indirectly useful sometimes, but they more commonly impede the recovery; whereas aid judiciously given in this quarter is always beneficial and often successful.

The chest is the battle-field of past conflict, the lymphatic duct the drill-ground for new levies of life.

Remark in the orange-girl the costiveness and the amenorrhœa. Both of these are good things in consumption. I do not mean good signs, which they are not, but advantageous in the prolongation of life. For in such a condition, the fat taken in is not exhausted by even the natural drain—abnormally requisite it is abnormally retained.

The effects of cod-liver oil becomes less and less a marvel the more we know of physiology. The instinctive desire shown by all nations for an oleaginous diet, and their association of substances of this nature with proverbial ideas of happiness in all ages, show the value of a certain amount of it to man's comfort. The "butter and honey" of the prophet, used as a phrase for royal food, and the constant reference in the Bible to oil as a luxury (though it could have been no rarity in "a land of oil-olive")—these are sufficient to prove its estimation among the Hebrews. The Hindoo laborer, when he devours his gallon of rice for a meal, will spend all the pice he can get on the clarified butter of the country; and "as good as ghee!" is his expression of unqualified admiration. It was a mistake in Baron Liebig to state that oily foods are disgustful to natives of hot climates. All races of men require them and seek after them; and the taste of the Esquimaux, so often quoted, depends mainly on the abundant supply of the article which the sea places at his disposal, coupled with a scantiness of other provisions. Throughout mankind there is an instinctive appreciation of the importance of this aliment, independent of accidental differences of nation or locality. It seems felt to be, as science shows that it really is, a necessary material for the renewal of the tissues, and the desire for it becomes synonymous with a desire for augmented life.

An easily assimilated oil comes, in fact, into the short list of

directly life-giving articles in the pharmacopœia; for it is itself the material by which life is manifested. Hence, under its use, beneficial influences are exerted throughout the whole body; old wounds and sores heal up; the harsh wrinkled skin regains the beauty of youth; debilitating discharges cease, at the same time that the normal secretions are more copious; the mucous membranes become clear and moist, and are no longer loaded with sticky epithelium; the pulse, too, becomes firmer and slower—that is to say, more powerful, for abnormal quickness here is always a proof of deficient vitality. Such are the effects, perfectly consistent with physiology, of supplying a deficiency of molecular base for interstitial growth.

But that supply is useless unless the absorbents are fit to take it up, unless they are prepared (as the fourth case) by proper tonics for its reception.

To find the easiest assimilated oil, and to prepare the digestion for the absorption of oil, are the main problems in the cure of consumption.

The injudicious omission of fat from the dietary must doubtless produce similar effects to those which follow the indigestion of fat, in fact the converse of the effects which we aim at producing when we intentionally administer an excess of it as a remedy. As under the use of an easily assimilated oil the skin becomes elastic and firm, the debilitating fluxes cease from the mucous membranes and are replaced by normal secretions, the nerves feel joyous life instead of perpetual pain, and old sores heal up; so we may expect to arise from a deficiency of this article of food a dry wrinkled surface to the body, a persistence of leucorrhœal and other mucous discharges, that feeling of enduring uneasiness which denotes scant life, a deterioration instead of a renewal of all the tissues.

But I am not able to find any good illustrations of the matter. Where fat has been omitted, meat seems to have been omitted also in most of the instances I have referred to, and the symptoms might fairly enough be attributed in a great measure to that; or else there has been a complication of other causes of disease; or else the omission has been intentionally remedial, designed to reduce an over-abundance in the body.

A few years ago, during the prevalence of the attention excited by Mr. Banting's case, I did indeed hear reports of persons having

injured themselves by adopting with over-strictness the system by which that famous man tells us he regained the sight of his toes, forgetting that no similar mountain to his had ever impeded their view. But I never saw a real case in point. If the experimenters are really over-corpulent, they feed on their own fat, and submit with ease and advantage to the discipline; if they are not so, the instinctive desire becomes so strong that they cannot resist the sight of the forbidden luxury on the table. The possible rectification of their circumference is not worth such stoicism, and they stop in good time.

SECTION IV.

Indigestion of Fluids.

The assimilation of water is the least vital process in the whole course of digestion. It would seem capable of entering by the simplest endosmosis from the alimentary canal to the bloodvessels, where it is incorporated with the blood unchanged. The process can be carried on as long as life exists at all, and in obedience to the mechanical laws of diffusion:

Now the chief facts observed with regard to the connection of membranes with liquids, are the following:—

1. If a moist membrane be interposed between aqueous solutions of different densities, two currents will run through it, one from the denser to the rarer liquid, and one from the rarer to the denser, and the latter will be the strongest in direct proportion to the density.

2. The current is increased in the direction of a liquid in motion.

3. The current is increased in the direction from an acid to an alkaline fluid.

4. The activity of osmosis increases with the temperature.

There are, then, in the circumstances under which the blood-vessels and the contents of the bowels are placed, three very marked principal things which promote the passage of fluids into the former from the latter in a greater degree than the reverse. These are:—

1. The comparatively greater density of the blood;

2. Its motion;

3. Its alkalinity.

At the same time the animal warmth keeps up the general activity of the osmosis in both directions probably in the ratio of its degree.

Where any of these conditions are diminished (removed or reversed they cannot be during life), then the assimilation of water is retarded; and any excess remains inconveniently in the intestinal canal for longer than usual.

CASE LXXII.¹—A somewhat corpulent lady had lost much blood by bleeding piles before she applied for medical advice, so that she was reduced to a great state of anæmia. She did not come to me about the piles (which were removed), but on account of the flatulent tumidity of the intestines, and a perpetual "*glug-glug*" in them when she moved about. Her appetite was bad, and she therefore washed down her meals with copious draughts of water. She certainly observed that the more liquid she took, the more the "*glug-glug*" was distressing, but still she did not think she drank more than other people. I told her she must drink *less* than other people, and to that end advised the use at meals of weak lemonade without sugar taken in sips, and the sucking of a piece of liquorice when the mouth felt dry at other times.

Here the thin blood of anæmia refused to absorb as quickly as usual the watery fluids from the alimentary canal, exemplifying an infringement of the conditions required in the *first* law of osmosis.

Corpulent persons are generally thirsty souls. In two instances (Cases XXX. and XXXI. of my Table of Cases of Obese Persons, "On Corpulence," page 142) the corpulence was assigned distinctly to this cause. But they are inexplicably touchy about confessing it. I cannot make out why, seeing it is diluted drinks, not alcohol, that is the subject of inquiry. I dare say, therefore, that the patient before us did take more fluid than other people in spite of her denial.

The "*glug-glug*" of superabundant water may be distinguished from the noises of intestinal flatulence by being caused only by moving the body. The rumbling of gas in the bowels generally is loudest when the patient is sitting still.

CASE LXXIII.²—On February 16th, 1863, Mr. H—, a pork-butcher of healthy appearance, 30 years of age, complained to me of the weight and distension which he always felt after his usual meals; though if he took a chop at a coffee-house or a snack standing he did not feel it. The difference seemed to be that when sitting down comfortably at his leisure he took a considerable allowance of liquid, which was at other times avoided. He said he had nothing else the

¹ Case XLIX. in 2d edition.

² Case L. in 2d edition.

matter with him, but noticing the breath short, I examined his heart, and found a loud sawing systolic murmur.

Here the *second* law is exemplified. The motion of the blood was retarded by the valvular disease of the heart, and the absorption of fluids in the œsophagus and stomach proportionately retarded likewise. It is in burly, otherwise healthy, persons with diseased hearts that this indigestion of water is most generally conspicuous. When the patients are seriously ill and laid up by their structural ailment, it does not so often occur. Perhaps they are not so thirsty, and so do not put the matter to a test.

It is a hint sometimes practically valuable, not to overburden with slops the stomach of cardiac invalids.

Another exemplification of the *second* law of osmosis may be observed in impediments to the motion of the blood from the lungs:—

CASE LXXIV:—Susan B—, a married woman, aged 41, thin, sallow, and hollow-eyed, was admitted under me at St. Mary's June 15th, 1860. She had been subject to shortness of breath for a long time; but this symptom had been aggravated since the previous March, when she seems to have caught cold. Since then also she had been able to eat her food only very dry, for if she took fluid with it, nausea and vomiting occurred. This was worse when the asthma was worst. The kidneys and heart were healthy. Her appetite was good.

Headaches also were very frequent, but they seemed independent of the gastric ailments, for they are reported when these are better.

The usual physical signs of pulmonary emphysema were present, and she was treated accordingly with quinine. Her diet was meat and pepsin. She was discharged "cured" on July 13th; the "cured" referring to the indigestion for which she was registered, not to the emphysema, I presume.

It may be remarked that in this last case the rejection of the water by the digestive organs was gastric, whereas in the two former it was intestinal. There is in this fact no significance of the locality of the impediments to circulation—patients with pulmonary disease quite as often have the gurgling on movement, and cardiac patients will sometimes vomit. Indeed, when you are thinking of them only as *messengeries* of the blood, the heart and lungs are one.

An illustration of the *third* law of osmosis may be found in almost all cases of dyspepsia in a minor degree, but not always

observed by the patient with such accuracy of detail as in the accompanying instance.

CASE LXXV.—In the summer of 1865, a craze for athletic sports seized upon a number of young men in Liverpool; and among others, a thin and muscular, but rather delicate complexioned and "*spirituel*" merchant of twenty-five, who had generally led a somewhat luxurious self-indulgent life, took to foot-racing. After one very hard run, he says he "caved in," whatever that trans-atlantic expression may mean. However, he lost his appetite forthwith for a period of several months, and has never since felt so comfortable after meals as he used to feel. In 1866, he went to Brazil, where he was very well and strong; but he caught cold coming home, and was upset again. In the early part of 1867, he had a succession of "bilious attacks," consisting of paroxysms of nausea and loss of appetite. In April he began to suffer after meals from a feeling of distension and eructation, dependent considerably upon the nature of the food and the way in which he takes it. If he had only a limited quantity of dry food and did not drink with it at all, he could manage pretty well. But if any of the dishes were sloppy, or if he satisfied his thirst during the meal, he paid the penalty afterwards in excessive discomfort, in eructations and the return of obnoxious articles of diet to the mouth. He could not even take plain water at meals, and any other liquid was out of the question at any time. He felt all right and light when hungry, and if he could live on air would have been quite happy. But there were warnings that this state of existence was unattainable; he had got much weaker, and was ten pounds less in weight than when in training for foot-racing. These notes were taken October 24th, 1867, when he first came under my notice.

On manual examination of the stomach, it appeared that the distension was not only subjective. It really was puffed out still at noon with the breakfast taken at half-past eight.

He made a curious remark about the regurgitation of victuals which sometimes occurred. It did not at all signify in what order they were taken, it was always the indigestible solid or fluid which came first up, as if a selection had been made by the œsophagus of that which was most in the way.

I prescribed quinine and strychnine for a week, and then sent him for a month to Spezia and Florence, on the understanding that he continued his medicine during his tour.

On his return he came to show himself. He had gained between six and seven pounds in weight, I think, and his face was plumper. He said also that he could walk ten miles. It appears that for about a fortnight he felt no improvement at all in his digestive powers. Then there was a sudden start of renewal, and a few days before I saw him another spurt; so that he was able to drink with his dinner half a bottle of rough Bordeaux wine, which he found to agree better than other vintages. His chief difficulty was at breakfast, when the indigestion of fluid still persisted. He could not take the smallest quantity. But a dry roll, even when new, caused him no inconvenience.

Doubtless in this case the conditions are somewhat exaggerated, but more or less of the same indigestion of fluids arises in all cases

of diminished vitality of the digestive organs from whatever cause.

For the due understanding of this, let the reader note on himself what takes place as a consequence of food in the normal condition of the stomach. Let him take the specific gravity of his urine on rising and look at the color. Then let the stomach be thoroughly roused to acidity by a healthy breakfast at which the usual quantity of fluid is taken. Observe the urine passed during the next two hours. It is paler, of lower specific gravity, neutral, perhaps alkaline. The fluid contents are augmented in greater proportion than the solid, the basic elements in greater proportion than the acid. If pickled fish and light wines form part of the breakfast, the limpidity is still more decided.

The explanation of this I believe to be that the acid of the stomach being at that period in special excess, the osmosis of water through its walls into the alkaline blood is peculiarly rapid. Water with salts and solids soluble in water enter into the circulation quickly, and fill it. They pass away quickly by the kidneys, carrying off often some of the blood's soda with them, and so increasing the fixed alkali of the urine.

When the stomach gets to rest again and is neutral, the fluids do not pass so fast into the blood, or away by the renal tubes; then the urine resumes its full color, acidity, and average specific gravity.

As the body gets tired of the day's work, the digestion is not so active. And hence after luncheon this physiological variation of the urine is not so marked, and still less after dinner.

Now observe an invalid, the vitality of whose stomach is below par. The physiological variations are much less marked, the urine is never so high and rarely so low as that of a healthy person in healthy condition. Its acidity also alters little during the twenty-four hours. The interpretation of this I take to be the imperfect acidity of the walls of the stomach causing a delay in the absorption of its aqueous contents, which lie there unchanged or decomposing; in either case a burden, giving rise to pain and inconvenience, sometimes to vomiting.

I must be allowed a short digression, suggested by the last remarks, and justified at least by the importance of the subject, to urge attention to the hour at which urine, brought for analysis, is passed. Unless specimens are taken at various times of the day, serious mistakes may be made.

CASE LXXVI.¹—A gentleman came to me yesterday forenoon about a deficiency in his generative powers and other symptoms unnecessary to detail. The specific gravity of some urine he passed was 1.015, and it appeared probable that it was upon this ground that the medical man who sent him to me had been giving iron. I told him to come again this morning, and bring a specimen made on rising, as well as another specimen of that after breakfast. The latter was again about 1.015, but the nocturnal collection was 1.026, showing that the vitality of the blood and assimilation were sufficient. (*June, 1866.*)

The indigestion of fluids as a consequence of anæmia is cured by the administration of iron.

When it results from heart disease, or from emphysema, it indicates a purgative, and perhaps the most efficient is a mercurial purgative, which empties out the vena portæ, enables the blood to circulate therein more easily, and fluid to be absorbed in a normal manner. An observant patient of mine with emphysema tells me she finds it a very good plan never to drink with her meals, but afterwards.

When the indigestion of fluids arises from the atonic condition of the mucous surfaces themselves, it is best treated by nerve tonics, by rest, by change of air and scene.

I have remarked that persons with weak digestion, when obliged by the needs of life, to eat more at once than their stomach will easily bear, learn by experience to avoid the consequent inconveniences by not drinking with the meal. I have tried this myself with success. I am in the habit of having a weekly dinner-party in Bethnal Green, where my guests, weavers, doll-makers, cobblers, and such like, have very poor stomachs, yet they make it their business to clean the bone of a leg of mutton and trimmings, and to see the last of a monstrously heavy plum-pudding. The first time I partook of these dainties I was uncomfortable all the rest of the day, and wondered whether my late guests were blessing me on the contrary. I then observed that I was the only one who took any draughts from the jug of water on the table. I imitated my neighbors in their abstinence, and was quickly convinced of its wisdom; for I found myself thus enabled to feed heavily *pour encourager les autres* at an unaccustomed hour without inconvenience. The meal is just as long in digesting, as shown by the delay of appetite, but I feel it not.

¹ Case LII. in 2d edition.

CHAPTER IV.

LOCAL PAINS IN THE STOMACH ARISING FROM
INDIGESTIONS.

SECTION 1.—Heartburn. SECTION 2.—Waterbrash. SECTION 3.—Spasms. SECTION 4.—Gripes. SECTION 5.—Weight. SECTION 6.—Constant pain. SECTION 7.—Pain in the stomach from other causes than indigestion.

IN the notes of cases previously used in illustration of my subject certain pains or discomforts are often stated to have been felt in the epigastrium or its immediate neighborhood, without their distinctive natures being detailed. Either they were not severe enough to affect the general treatment, and so their form was not noticed; or they could not be clearly made out from the patient's words; or the record was incomplete in this respect, though full enough for the immediate purpose of its citation.

A little care will enable the observer to make out considerable differences in these pains—differences which may often modify our diagnosis of the anatomical state of the parts, our prognosis, and our treatment; and I shall devote this chapter to a consideration of them.

The table of contents enumerates the names which I shall use in describing them in detail. I prefer these words to Greek or Latin compounds which profess to include them. The artificially built-up terms have, indeed, a show of science, but are not at all more accurate in reality, and much less graphic than those begotten of daily use.

SECTION I.

Heartburn.

Heartburn is a painful sensation, resembling that produced by swallowing something very hot, which arises at various intervals after food in the upper part and towards the left side of the pit of the stomach. It runs in paroxysms at the back of the breast-bone up the course of the œsophagus, culminating in the pharynx, and

each paroxysm often passes off with a feeling as if hot smoke had escaped into the mouth, though there is very little, if any, escape of air. Sometimes with a semi-voluntary effort a small quantity of intensely sour fluid is thrown up. The pain of pure heartburn is not caused or increased by pressure, and is not felt between the shoulders.

There is in heartburn often a temporary salivation, and the secretion from the glands being voluntarily swallowed somewhat relieves (by its slight alkaline reaction, probably) the discomfort of the cardia; but if it is spat out, no relief follows. An arrest of the passage of this copious saliva into the stomach will be shortly described under the heading of "Waterbrash," in a future section. Though the sensation is that of a cramp, and the œsophagus is a muscular organ, I do not think there is, in ordinary cases, any real tonic contraction of the fibres. There is no movement of the muscles in the throat, such as may be readily felt on voluntarily gulping. There is certainly no visible contraction of the back of the fauces. Indeed, when the sensation gets there, it is rather one of relaxation, "as if smoke escaped," say the patients. Moreover, if a little fluid be swallowed, its passage is not resisted by stricture. There appears to me to be a subjective perturbation of sensibility, rather than of contractility, in the milder cases I call "heartburn." Where there is a real spasm, "waterbrash" is produced, as I will explain under that heading.

Though this morbid phenomenon is manifested by the œsophagus, its causes do not lie *in* the œsophagus. Cancer, ulceration, or stricture of that organ, do not originate it in the majority of cases of these lesions, whereas it is a very common consequence of the less fatal morbid conditions of the stomach. We may roughly say also that it is easier produced by general than by local states of the gastric sac, and rather by slight than by severe derangements. We constantly find cancerous tumors and considerable ulcerations in its walls without any such œsophageal symptom at all; whereas a catarrh, a mucous flux, and more commonly still simple atony of the stomach, seldom exist long without heartburn. This would seem to show that a certain amount of health, as well as a certain amount of disease, is necessary.

From the effects which alkalies have in allaying temporarily this pain, it may be inferred to arise from the action of the acid contents of the stomach on the cardiac and œsophageal nerves. It

is true the gastric mucous membrane itself does not immediately suffer from acid; it secretes acid,¹ and bears acid in contact with its coats without inconvenience. The gullet, too, will do so for a short time; swallowing a mouthful of sour victuals or drink gives a healthy man no immediate discomfort. But we cannot fail to have observed that many influences which, when intermittent and alternated with rest, are indifferent or even pleasant to the sensory nerves, become exquisitely painful, and even cause material disease of tissue, when long continued. For example, the immersion of a limb in a water cooled a few degrees below the temperature of the air is not disagreeable, and may be borne with intermissions for any length of time; but it becomes absolute torture if persisted in without an interval of rest or reaction. A moderate degree of pressure, if continued too long, will cause first pain, then gangrene or atrophy. A continued dribbling of feces will make the anus sore—a continual running from the nose excoriate the nares, &c., though we hardly notice it when lasting only an ordinary time. Just in the same way we must look for a quite different class of consequences from the intermittent and from the continued action of acids on the sensory portions of the pneumogastric. But when we trace heartburn to the impression of acid on the œsophageal and cardiac plexus, we do not necessarily imply that the acid (normal or abnormal) is in excess. It very often is not so; and we must refer the symptoms to over-sensibility, that is, to the sensibility of a normally insensitive part, which I may remark in passing, is always a painful sensibility.

We thus arrive at two immediate causes of the morbid phenomenon in question.

1st. Too long-continued acidity of the stomach.

2d. Over-sensitiveness of the cardiac and œsophageal nerves.

I will illustrate the action of these two causes by the citation of some common typical cases.

¹ There appears no doubt about gastric juice being *secreted* acid, and becoming neutral only from mixture with saliva. See the experiments of Drs. Bidder, Schmidt, Grünewaldt, and Schröder, compared in "Digestion and its Derangements," chap. iv; and "Experiments on Digestion," by Dr. F. G. Smith (Philadelphia, 1856). This last-named renewal of observations on a patient with gastric fistula, formerly servant to Dr. Beaumont, seems to show conclusively that in the human subject the acid secreted is not hydrochloric, but probably lactic. The explanation of finding hydrochloric acid in gastric juice is that lactic acid in a nascent state decomposes the chloride of sodium contained in all animal fluids.

CASE LXXVII.¹—Miss K—, aged 40, consulted me in April, 1857, about an intermittent hemicrania which had come on recently through living in an aguish district. She had a look of chronic invalidism more than was justified by the recent malarious infection, and on inquiry I found that for many years she had suffered from what she called “risings in the throat,” which came on about three hours after meals. Dinner was the most painful meal. If nothing came up, as was usually the case, the “risings” continued two hours or more, and went away gradually. But if by a semi-voluntary effort she turned the “rising” into an ejection of a small quantity of food and air, relief followed. On these occasions what she brought up was very acid to taste and smell. She had been physicked at various times in previous years for this heartburn without benefit, and had learned to bear it. She found, indeed, that soda gave temporary ease; but fancied the symptoms were aggravated by a persistence in the remedy, and despaired of being ever better. She came to be cured of her headache. For this I prescribed, and killed two birds with one stone, for she was later led to volunteer a confession that the quinine I gave her to cure the hemicrania did the heartburn good also.

I saw Miss K. again in September, 1869, when she told me she had kept herself well for several years by resuming the medicine from time to time. But at the change of life she had acquired the habit of taking purgatives, which had brought back indigestion in the form of acidity and giddiness.

By the “three hours” after meals the stomach ought so far to have emptied itself that the cardia should not be distended, and the orifice, relieved of the pressure of acid matters, should be enjoying the change of a trickling flow of alkaline saliva. Though the general contents of the stomach may, and, indeed, ought, to remain acid longer than that, yet the lower orifice of the œsophagus requires a period of alkalinity, and suffers if it does not get some.

Note—that the throwing up of a small quantity gave relief, because it brought the stomach into a normal condition as to contents.

Note—that what is brought up in heartburn was acid, showing a free communication with the stomach, and, therefore, that the œsophagus was pervious, not spasmodically contracted, as the patient’s sensations led her to believe.

This form of heartburn frequently comes on at night, preventing sleep.

Sometimes the patients will say they have “pain *before* food,” which pain on inquiry turns out to be postponed heartburn arising from the last meal.

¹ Case CI. in 2d edition.

CASE LXXVIII.¹—Rev. E. M—, aged 26, has worked so hard to raise himself to be fellow and tutor of his college that he has injured his digestion. The false appetite, which intellectual exertion brought on, made him overload the stomach at dinner with more than it could part with by next meal. This induced a pain before each meal, accompanied by a sensation as of something rising up into the fauces. No vomiting or eructation, though the stomach evidently was not empty. He had besides some curious nervous symptoms, for which I gave him quinine and strychnine, and he got better of all together.

CASE LXXIX.²—Mr. John H—, aged 42, came to me February 7, 1866, complaining of pain at the epigastrium towards the left side, rising up in paroxysms to the fauces, and which was shown to be only heartburn by the absence of tenderness on pressure. He declares it does not come on till full four hours after food, and it passes into hunger for the next meal.

Sometimes it is absolutely mistaken for hunger, and an attempt made to relieve it by the usual means of staying the latter pain.

CASE LXXX.—Emily A—, a “nervous and excitable” dressmaker, aged 32, and unmarried, was admitted to St. Mary’s, February 25, 1853, having been suffering for six months with pain in her chest and epigastrium, flatulence, and occasional diarrhœa. She looked very hysterical, but had never vomited. She was stated to be constantly hungry, taking food every hour at least, and having been supplied by her friends with jellies, wine, arrowroot, &c., without which she said she should “sink through the bed.”

Observation, after her admission to the hospital, elicited the fact, that she really did not consume a great deal of victuals, and did not take them with appetite. But she had an uncomfortable sensation at the scrobiculus cordis, which was capable of relief by swallowing food, and which she had used herself so to relieve.

An attempt was made then to cure her with quinine and hydrocyanic acid, but she quitted the hospital on March 2, dissatisfied with not being allowed to eat when she liked.

An evil, which sometimes arises from relieving a false sensation of hunger by taking food, is exhibited in the next case. The undigested aliment passed into the bowels, causing diarrhœa and griping, the reason of its remaining undigested being hysterical over-sensitiveness of the stomach simulating hunger.

CASE LXXXI.—Adele H— sent up to me from Liverpool by Dr. Grimsdale, June 26th, 1867, is a fine grown girl of eighteen, who has never had any serious acute illness. Ever since she left school, in July of the previous year, she had suffered almost constantly, that is to say, with only an occasional interval of a week or ten

¹ Case CII. in 2d edition.

² Case CIII. in 2d edition.

days, from a gnawing pain at the epigastrium, which, like the pain of hunger, was frequently relieved by food; yet was not like the healthy pain of hunger, which she recollects to have felt. It, however, made her what she called "ravenous"—that is, always desirous of food, though from the friend who accompanied her I understood the quantity consumed was not great.

The ingestion of victuals, after relieving the pain at the epigastrium, was often followed by a griping and grumbling of the bowels, and then by a diarrhœa of light-colored, pultaceous stools. This has occurred as often as nine times a day. She described the abdomen as sometimes drawn up into knotty lumps by the spasmodic pain. She very rarely passed wind by the bowels. The tongue was clean; the intervals of the catamenia rather too short. The pupils of the eyes are dilated, but she has never been hysterical, nor is her manner that of a person so disposed.

I ordered her a shower-bath every morning, and a draught of fl̄j of the ammoniated tincture in fl̄j of the infusion of valerian, twice daily. I saw her several times during the three weeks she stayed in London, but found it needless to change her treatment, as after the first four or five days she remained free from her ailment. So I dismissed her home with only the additional recommendation of horse-back exercise.¹

The mistaking of this morbid sensation for hunger evidently depends on the late period after meals at which it has occurred. If it comes on sooner the error can scarcely happen.

CASE LXXXII.²—Henry S—, aged about 40, a solicitor in large country practice, came to me in March, 1856, complaining, among other things, of heartburn commencing within an hour of every meal. He had sometimes made a strong effort at eructation and brought up some of the contents of the stomach, but it gave him no relief. What he brought up did not taste particularly sour, and consisted of whatever he had eaten. I prescribed him a course of hydrocyanic acid (miv in infusion of gentian three times a day). He continued to take that till quite well, and remained well till a hasty journey to Vienna in the autumn of 1863 brought on an attack of diarrhœa and great prostration. After this his old symptoms returned, and were again appeased by hydrocyanic acid and a blister to the scrobiculus cordis.

This kind of heartburn occurs most among brain-workers, but yet not among the highest class of brain-workers. Those rather are affected, who, with moderate abilities, have undertaken responsibilities which appear to them, on selfish grounds, heavy and overwhelming.

CASE LXXXIII.³—Mr. W—, a cheesemonger, aged 30, came to me last January for a feeling of pain rising up from the epigastrium to

¹ See Chapter VII., last paragraph but three.

² Case CIV. in 2d edition.

³ Case CV. in 2d edition.

the back of the throat, as if smoke arose from the stomach, usually under three-quarters of an hour after meals. If he ate supper, this would happen in bed and give him sleepless nights.

He was an uneducated soul-less man, but had worried himself a good deal about his trade, and was also anxious about his health, so that his tongue had the quiver and the wet white coat of an overwrought intellectual woman's.

Though doubtless the largeness of the meal contributes greatly to the severity of the heartburn with acidity, it is by no means an essential in its production.

CASE LXXXIV.¹—During 1861 and 1862, I attended the wife of a retired Anglo-Indian physician, aged about 40, for general sluggishness of the alimentary canal, accompanied by a tendency to mucous discharge *per anum*. She suffered at first a great deal from "acidity" within the first three hours after meals, but sometimes sooner. She constantly averred, having at my request subjected the matter to the test of experiment, that a small quantity of bread, or any other simple food, brought on the "acidity" as certainly as a full meal. That this was due to sluggish action of the gastric muscular fibres was evidenced by her deriving benefit from strychnine; but that it was not wholly so to be debited, its early supervention showed. What she called "acidity" was in fact heartburn.

Now in the first, second, third, fourth, and fifth of these specimen cases we may fairly accuse the stomach of atonic sluggishness by which its normally acid contents are detained too long in their passage, and the nerves exposed too long to that acid. But in the next two the pain cannot be debited to prolonged exposure, for it would be an exceedingly abnormal thing if the cardia were not acid at that time. There must have been an over-sensitiveness of the gastric plexus. The last (Case LXXXIV.) is one which, though it stands alone here, really represents a larger number than the others, namely, those which are a transition between the classes, presenting the characteristics of both in various degrees. We may take the marked cases as the two ends of the scale, between which the majority of our patients lie.

Although, therefore, it is impossible to make a clear division of our patients into the two classes, yet has the distinction an importance, for the nearer the symptom occurs to the meal the more is it due to hyperæsthesia, and the further off the more to slow digestion.

¹ Case CVI. in 2d edition.

And with an eye to this pathology are the patients best treated. First, as regards the immediate popular relief by alkalies: when the heartburn does not come on till four hours or so after a meal, an alkali may be safely taken even habitually; it is time for the stomach to be losing its acidity, and there is no harm in assisting nature. Still, it must be remembered that this temporary antidote, taken in this way, is not a cure. But if the heartburn comes on within about an hour of the ingestion of food, an alkaline neutralization of the gastric contents is positively abnormal and injurious. It prevents the due digestion of the food, and so deprives the body of nutriment. It induces anæmia, debility, and possibly some of the further ills to which these degenerators lead.

In the cases with a preponderance towards the latter type local anæsthetics come into play. Opium and its salts, bismuth, zinc, silver, henbane, have all been found of use as a change, but the main stay of the practitioner is hydrocyanic acid. It does more good combined with less harm than any other remedy. Carbonic acid is also a harmless anæsthetic, and indeed a normal one, for the natural atmosphere of mucous membranes is carbonic acid. I have persuaded people to take carbonated ("aërated") water instead of soda, and they have found equal relief. I have sometimes combined a blister with hydrocyanic acid, from my observation of the effect of epispastics in pleurodynia, and I am inclined to think it anæsthetic in its action. But it is a disagreeable measure, and more suitable when the pain is continuous.

Mineral acids are of more use in the heartburn of sluggish indigestion than in the hyperæsthetic; but I think they seldom cure without the aid of other more powerful tonics. One great objection to their use is the injurious action on the teeth. Dentists tell me that we physicians make more work for them than any other external enemies to the soundness of the grinders by our employment of mineral acids. In consequence I have made a few trials of acetic acid as a substitute, but without much encouragement to persevere. Mineral acids should not be continued for above ten days at most.

In hyperæsthetic heartburn the chewing a piece of liquorice or of myrrh slowly in the mouth will often be of great service, especially when it occurs in pregnant women, to whom one is loath to administer drugs without strong cause.

It is always worth while, especially when the heartburn comes

on in bed, to try the effect of change of posture; lying on the back, lying on the face, on one side or another, or getting up for a few minutes, will sometimes give rapid relief.

Howsoever, the final reliance of the physician for cure must be in a renewal of the powers of life by tonics, especially by nerve-tonics, especially by quinine and strychnine; and then when a step of progress has been made with these, by the restoration of the blood with iron. I will not tarry over the shapes in which these remedies may be administered—I am careless of the form so that I get the substance. Some forms may be better than others, but all are good, and all distance competitors so far, that their mutual rivalry is of no moment. It will be seen that in all the cases I quote, resort is had to these. They are always at hand, always safe, and almost always applicable.

I have spoken of alkalies as a temporary palliative in heartburn. There is another way in which they are sometimes employed with advantage, and which may be described fairly as their “restorative” use. This has been fully commented upon in a previous chapter (see page 67), where rules for applying the two methods are given, and a strong line drawn between them. To preserve the strength of that line, I have put what I have to say on each subject in separate chapters.

As a recapitulation of what I have been saying, I will give in official form

SPECIMENS OF PRESCRIPTIONS FOR HEARTBURN.

When it occurs not less than three hours after food.

R.—Trochiscorum sodæ bicarbonatis unus (gr. v sodæ bicarbonatis continens) urgente cardialgiâ sumatur, et repetatur, si opus sit.

R.—A teaspoonful of carbonate of soda and a teaspoonful of spirits of sal volatile in a glass of water.

When it occurs within three hours, but not within one.

R.—Trochiscorum bismuthi,

Trochiscorum morphiæ, ââ partes equales.—M.

Sumatur unus, urgente cardialgiâ, et bis terve repetatur, si opus sit.

R.—Trochiscorum morphiæ j et post horæ quartam partem trochiscorum sodæ bicarbonatis j sumatur.

R.—Sodæ sesquicarbonatis ʒ iss,

Acidi hydrocyanici diluti flʒss,

Aquæ flʒx.—M.

Sumatur ut antea, sed non repetatur. Dosis sit flʒj.

R.—Bismuthi carbonatis drachmis duobus adde mucilaginis acaciæ quam minimum sufficiat ad pilulas xxxv faciendas, quarum sumatur una vel duæ pro re natâ.

R.—Bismuthi carbonatis ℥ij.

Fiant pulveres duodecem, quorum sumatur unus ex aquæ pauxillo urgente cardialgiâ, et postea minuta quinque inhauriantur acidi nitrici diluti min. xv in aquæ fl℥j.

(In this prescription the patient gets four medicines one after another, carbonate of bismuth, nitric acid, carbonic acid, and nitrate of bismuth.)

R.—Acidi hydrochlorici diluti fl℥ij,
Liquoris strychniæ fl℥iss,
Aquæ fl℥xx.—M.

Fiat mistura, cujos sumantur coch. ij maxima ter die, horas duas post cibum.

R.—Bismuthi subnitratis,
Ferri peroxidi hydrati, āā gr. viij.—M.
Fiat pulvis ter die sumenda.

R.—Zinci oxidi gr. v.
In pulvere ex aquâ sumantur urgente cardialgiâ.

R.—Zinci oxidi gr. iv,
Extracti hyoscyami gr. j.—M.
Fiat pilula urgente cardialgiâ sumenda.

(These two last prescriptions suit the irritable heartburn of toppers and dram-drinkers.)

In Pregnancy.

R.—Myrrhæ fragmenta quædam ad fabæ circiter magnitudinem, quorum unum in ore masticetur urgente cardialgiâ.

When the bowels are irritable after the heartburn.

R.—Pulveris cretæ aromatici cum opio,
Sodæ sulphatis, āā gr. v.—M.
Fiat pulvis duas horas post cibum sumendus.

R.—Cupri sulphatis gr. $\frac{1}{4}$,
Opii gr. $\frac{1}{4}$.
In pilulâ urgente cardialgiâ sumantur.

I should not have given so many specimens of officinal medicines in addition to the remedies I had already named in the text, but often a good deal of good in this sort of case is done by variety, and a change of prescription may obviate the necessity for a change of doctor.

SECTION II.

Waterbrash

(or Pyrosis) has thus far a similar local pathology with heartburn, that the manifestation of the phenomenon is in the œsophagus. The difference is, that the spasm which there seems to be subjective only, is here exhibited as a muscular contraction. The tube is closed by it, and the path into the stomach of the saliva trickling downwards is obstructed so that it collects in considerable quantities, and gushes up into the mouth without any effort of vomiting. The fluid in its pure state is like all the secretions of the mouth, alkaline, and exhibits under the microscope no other formed contents except the buccal, faucial, and œsophageal epithelium.

In his valuable monograph on the diseases of the stomach Dr. Handfield Jones has represented waterbrash as a watery catarrh of the mucous coat of that organ, analogous to bronchorrhœa for example. If that were so, it would always contain gastric, and not salivary elements; and it would also be filled with mucous globules, as the flux of nasal or bronchial catarrh is. It would also be ejected by a distinct effort of vomiting and nausea, which is the case only when the contents of the stomach are mixed with it.

I am speaking here of pure waterbrash, such as occurs in well-established cases, and in the morning after rest. But, in all frequently, and in some habitually, the eructating effort after the first ejection throws up some of the contents of the stomach along with the pyrotic fluid, and then, doubtless, stomach cells and digestive powers may be found in it, as Dr. Pavy has observed.¹ In these instances it may be neutral or acid, but when copious and pure it is alkaline.

It was observed long ago by Beaumont, and repeated by Bernard² that irritation of the mucous membrane of the stomach arrested its secretion. So that it does not seem a probable explanation of pyrosis, which is usually (at least) connected with irritation of the viscus, to trace the gush of fluid to that source.

The origin of the idea would seem to be a difficulty felt by non-physiological persons, and was by some medical men with whom I have conversed, in accounting for what seems at first sight

¹ Digestion and its Derangements, page 133.

² Archives Gén. 1846 (Suppls.), page 7.

such a great increase in the quantity of saliva. But is there really any great increase? According to the calculations of Bidder and Schmidt, their direct experiments on themselves,¹ and the experiments of Mitscherlich² on a patient at the Berlin Hospital with parotid fistula, the quantity of saliva normally secreted should be a good three pints per diem. And if this is prevented from being absorbed by a dormant state of the œsophageal membrane and mouth, and by spasmodic contraction of the sphincter cardiae is arrested in its passage into the stomach, more than the usual pyrotic regurgitation is readily accounted for.

Moreover, in some instances the oral glandular evacuation seems really augmented, and the patients are conscious of swallowing more spittle than usual. These cases have seemed to me to be those where there was most decided irritation of the stomach, and where it may be supposed that the arrested gastric secretion should be replaced by an augmented flow from the colleague glands of the mouth; just as checked perspiration (alkaline) increases the passage of urine (acid.)

The alkaline nature of the fluid of waterbrash, contrasted with acidity of ordinary regurgitation, has been made by some a groundwork for a primary division of indigestions into acid and alkaline. Such a suggestion occurs even in the otherwise shrewd and accurate work of Dr. Brinton on the Diseases of the Stomach, but in spite of that I cannot but consider this an arbitrary and artificial division, without practical utility or basis in nature. Acid and alkaline regurgitations are often found on the same day in the same persons; and the conditions which lead to them in various cases are the same in nature. In fact, neither the acidity nor the alkalinity is morbid, but are both the normal conditions of the secretions evacuated.

The following case exhibits the principal features of waterbrash in its most usual form:—

CASE LXXXV.³—Margaret S—, aged 22, an Irish maid-of-all-work in a small tradesman's family, stupid, ignorant, and bowed down in spirits, applied for advice at St. Mary's April 18th, 1855, for what she called "sickness at heart" (*Hibernicè dictum*) and "vomiting." She had been ill about two months, during which time what she

¹ Die Verdauungs Saefte, s. 13.

² Ueber der Speichel, von C. G. Mitscherlich, p. 9.

³ Case CVIII. in 2d edition.

called "sickness" had occurred daily. She looked in pain, and pressure on the pit of the stomach showed it to be tender when pressed with one finger's point in the cardiac region, though the flat palm laid on the spot caused no uneasiness. This pain was also increased by eating, especially potatoes, bread, and tea, of which her diet chiefly consisted. She was admitted as an in-patient, and then we had the opportunity of observing that what she called vomiting had not really that character. She used to have some eructations two or three hours after meals. But this inconvenience mostly occurred at night, ceasing towards morning with the depth of sleep. When she began to move about for the purpose of rising a sudden gush of fluid would come into the mouth once and again, but seldom or never a third time. There was no retching or effort, and no marked sensation of distress or of relief. The quantity was seldom more than five to six ounces. Preserved in a vessel, it was colorless, slightly opalescent, alkaline, and a little adhesive, like thin saliva. Under the microscope it exhibited large pavement epithelium and a few granular globules. At a later period of her residence in the hospital it was sometimes found less transparent and acid, as if some remaining contents of the stomach were mixed with it. The tongue was red in the centre, with white coated edges; the catamenia had been irregular for several months.

She had had a similar illness the previous year, but had recovered by rest and medicine. Both attacks she attributed to hard work and bad food.

She was treated with mustard poultices and leeches in several relays, at first four being applied, and then three every other evening, for a week or ten days, on the tender spot of the epigastrium, with 15 grains of bismuth thrice a day for ten days; then with iron pills and shower-baths. Her diet was principally broth, with milk and lime-water.

The leeches and the bismuth seemed to relieve the eructations and the pyrosis, but the cardiac pain remained till she got to shower-baths and iron.

Perhaps the most conspicuous effect was that which is to be credited to the diet, for she gradually gained twenty-one pounds in weight, advancing from 7 st. 11 lb. to 9 st. 4 lb. between the 27th of April and the 8th of June, when she left the hospital well.

Observe that the loss of blood by leeches did not prevent Margaret S— from gaining blood and flesh by the improvement of her digestive powers. The local benefit to such an important organ as the stomach more than counterbalanced the inevitable abstraction of what truly enough, she could ill spare.

Some may cry out against such treatment as inconsistent. It is feeding up the patient with one hand and robbing him of his pabulum vitæ with the other. The reproach is just in a certain sense, but that a very limited one, and it may be levelled against half the operations of daily life. We are constantly suffering a

small loss for the sake of greater gain—" *necesse est facere sump-tum qui quærit lucrum.*" And I reckon the absence of a little blood as of no moment at all compared with the advantage of securing freer circulation or diminution of congestion in the alimentary canal. Do not let us be led away by the popular proverbial philosophy that "blood is life." The dogma is not true in the abstract, for blood varies in its composition, some being very valuable, and some worthless. To lose a portion of his imperfect circulating fluid is but small loss to an invalid, and that loss is amply repaid by the additional nutriment which a more rapid blood-stream will enable him to absorb. The deficiency is soon made up under the restorative plan of treatment.

In the next case a few more details of variety in the symptoms are given, and a pretty good original name for the disease was invented (I believe) by the patient.

CASE LXXXVI.¹—Mary F—, a widow of 60 years of age, had always enjoyed good health, and supported herself comfortably as a market-woman till she broke her arm in crowding to see her son off in a transport for the Crimean campaign. This was in January, 1855, and she was thus naturally stricken down in body and mind, and was almost starved, eating nothing but ill-cooked vegetables. In May she heard of her son's death, and this was the final blow to her health. The flatulence and pain which she had frequently felt at the pit of the stomach became more constant, and she experienced a sensation of coldness there. She often found her mouth suddenly filled with a "jet" of watery fluid, a symptom which she called "watery mouth." She could swallow the fluid by a voluntary effort, but the doing so was often followed by retching and actual vomiting of the contents of the stomach, smelling sour and tasting acid, but small in quantity. Often in the downward passage of this or of anything else she felt a resistance as of "a ball in the throat."

The greatest quantity of fluid was brought up on getting up in the morning, when it sometimes amounted to half a pint; but "watery mouth" occurred at all periods of the day, and sometimes immediately after meals.

The tongue had a white coat on the edges, and was clean in the centre. The bowels were costive. The urine was slightly acid, of low specific gravity—1.012, 1.011, are the numbers recorded in the case-book of the mixed urines. Her appetite for both food and drink was quite gone, and she felt an especial aversion to animal food.

She was admitted to St. Mary's under my care July 6th, and discharged well on August 17th, 1855. She was treated with rest, bismuth, two pints and a half of milk with a pint of lime-water daily, and a graduated approach to animal food. After eating she was to

¹ Case CX. in 2d edition.

take fl3ss of *Mistura Ferri composita* (*Pharm. Lond.*). By the 16th of July she proposed to eat a whole instead of a half mutton-chop which had been ordered. On the 20th "no complaint whatever" is the report, but then she had a relapse, and ejected some more fluid, and also some rancid oil. She was then ordered carbonate of potash and infusion of gentian, on which she improved slower but steadier.

It is remarkable how in waterbrash a separation is effected by the sphinctered extremity of the œsophagus between that tube and the stomach, and what a barrier it places between the two. There is no particular evidence of this in waterbrash which occurs when the stomach is empty of food, in the night or early morning, as is most usual. But sometimes it comes on at or immediately after meals, and then much surprise is caused to those whose education fits them for observing natural phenomena, by seeing nothing of that which has been so recently swallowed brought up again. I dare say this is common enough; but the most part of our pyrotic patients, being ignorant folk, do not notice it.

CASE LXXXVII.¹—Last August a retired surgeon, aged 64, consulted me for asthma produced by emphysematous lungs. Latterly, also, his digestion had troubled him a great deal; he had, after exertion, pain at the scrobiculus cordis, which he attributed to the diaphragm overstrained by his dyspnœa, but it seemed to me more in the stomach. He had also waterbrash occurring immediately after, sometimes even during, meals. He was obliged to leave the room and throw off several ounces, as much as five or six, of frothy, clear, cold-tasting fluid. Although this sometimes made him retch, yet the contents of the gastric cavity were never mixed with it. I gave him quinine and strychnine with apparent advantage.

The frothiness of the fluid arose, I presume, from the nearness of the period of its secretion. When it has rested in the œsophagus a few hours it becomes quite bubble-less, as in ordinary matutinal waterbrash.

In the following case the pyrotic fluid seemed to come into the mouth directly without having been swallowed at all. As the patient was a highly educated observant man, I have no doubt about the accuracy of his statement.

CASE LXXXVIII.—An English bishop, aged 71, consulted me June 26th, 1869, about a symptom which was very inconvenient to him in the performance of his political duties, namely, the sudden filling of the mouth with saliva, especially at night or early morning,

¹ Case CIX. in 2d edition.

or when the stomach was empty. He had suffered from it for three years, but got better gradually under the use of strychnine. Though he had sciatica in the autumn, he still continued to improve.

It has been mentioned that waterbrash is sometimes called vomiting by the patient—"easy vomiting," or "retching of spittle." It is so called even when it is evident that the œsophageal disease is an obstruction of a permanent character preventing the passage downwards of the saliva. As for instance in the following cases.

CASE LXXXIX.¹—Francis D—, a laborer, aged 57, was admitted to St. Mary's December 28th, 1852. Four months previously he first began to experience discomfort in eating and nausea. Often the first few mouthfuls swallowed would be rejected, after which he would be able to finish his dinner. He complained also of pain in the centre of the sternum, running through to the back, which kept him awake of nights. He stated also that he frequently "vomited," but the matter thrown up was found to be rejected with slight, if any, effort, and to consist of clear alkaline fluid, frothy at top. He stayed under my care three months, now better, now worse, sometimes relieved by bismuth and gaining a few pounds in weight. But the pain and dyspepsia were not cured, and were considered, probably correctly, to be due to ulceration of the œsophagus.

CASE XC.²—Mary S—, aged 69, was admitted May 25th, 1855, for difficulty of swallowing solids. The dysphagia seemed dependent on two obstructions, one felt at the top of the sternum and the other at the tip of the ensiform cartilage. She complained also of "vomiting," but what she threw up was found to consist of diluted milk in an alkaline condition, that is, diluted with an alkaline fluid, and evidently recently swallowed, or else of saliva. Yet she called it vomiting, and certainly seemed to retch with it. It was never more in quantity than five ounces. Several remedies were tried without effect, and she left on June 8th, discontented at not receiving an immediate cure.

The association of an irritability of diaphragm, exhibited in vomiting, with an irritability³ of œsophagus, exhibited in the spasm of waterbrash, is again shown in the following case.

CASE XCI.⁴—Mary Ann F—, a carpenter's wife, aged 52, was admitted to St. Mary's, August 4th, 1854. She had been in the habit for some time of taking her meals very hurriedly, but previous to that she seemed to have suffered from various forms of dyspepsia,

¹ Case CXI. in 2d edition.

² Case CXII. in 2d edition.

³ I use the word, not as explaining anything, but simply to fix the locality of the vital act.

⁴ Case CXIII. in 2d edition.

originally due probably to wearing tight stays as a girl, for her chest is very much contracted by that compression. The last five weeks she had found pain, followed by vomiting, come on about an hour to an hour and a half after taking food. The vomiting relieved her, but if it did not occur, she had for the rest of the day a painful feeling of weight at the epigastrium. At various times of the day also, unless relieved by vomiting, she found clear water rise into her mouth, which was usually tasteless, but sometimes had a bitter flavor. From the frequency of the vomiting she had become much emaciated. The catamenia had ceased naturally two years before.

The rest and well-prepared food obtained in the hospital stopped the sickness, so that we saw nothing of it for some time; but she had several attacks of waterbrash of clear alkaline fluid. Afterwards the vomiting returned, and sometimes was mixed with the pyrotic fluid, and sometimes contained strings of gastric mucus.

She was treated at first with this pill:—

R.—Pil. rhæi comp. gr. v,
Argenti nitratis, gr. $\frac{1}{4}$.
Omni nocte et mane.

But in a fortnight she felt very little better. She then took—

R.—Ferri sesquioxidi gr. x,
Bismuthi trisnitratis ℥j, ter die.

With this she got well and left our wards on September 4th.

In the last three cases it will be observed that a great part of the motive cause of the illness may be fairly assigned to the innutritious nature of the patient's diet. Its innutritiousness arises principally from its insolubility, and that insolubility principally from bad cookery. But yet this cause is not sufficient to produce disease in a healthy body; there is almost always found to be superadded some depressing influence on the vitality, of either a mental or physical nature. In the cases which follow, the injurious influence may generally be traced by its record in the history. It is either chronic congestion of the stomach by heat and dram-drinking, or a textural loss of substance in the shape of an ulcer, or the palsy of lead poisoning, or cholera, or dysentery, leaving their traces behind them, or phthisis pulmonalis, or, perhaps, in some cases, simply the general degeneration of the glandular structures in advancing years. Though the disease is one affecting the œsophagus, yet the first motive cause is in the stomach.

This is to be noticed in the waterbrash of the Scotch oatmeal-eaters, where the dietetic cause is so constantly the same, and so powerful as to establish the disease as an endemic.

Dr. Morgan, of Manchester, who formerly practised for a short

time extensively in the Western Highlands and Islands, in a letter to me on the subject, says:—

“Cases were so similar in their leading characteristics that after seeing some three or four, all others were but a simple repetition of symptoms. The history of a typical case was something of this kind. From some cause or other *the vitality of the system in an oatmeal-eater was lowered*. Thereupon the customary diet, whether in the form of cake or porridge, proved a source of irritation; the patient then lost flesh, and complained of a sense of burning heat in the epigastrium and along the course of the œsophagus. Coincidentally with these symptoms, considerable quantities of water (a pint or more) ‘came up’ rather than were vomited. . . . Women seem to suffer to a much greater extent than men.”

I believe the same is the case still more strongly with the potato-nourished peasantry of Ireland, whose more sensitive nervous system renders depressants of the vitality more common. But I have no written records of the fact.

Dr. Morgan goes on to attribute the innutritiousness of the diet to the form of preparation:—

“I always considered that the eating oatmeal in a semi-cooked state had much to do with it. As a rule, the people do not sufficiently boil the porridge, while in the form of oat-cake the food was still less thoroughly prepared. In using an oatmeal diet, I believe that it is very important to carry the cooking sufficiently far to liberate the contents of the starch-granules. Where this is not done, not only does the food fail to nourish, but it proves a source of gastric irritation. . . . If oatmeal is boiled for about half an hour it is, even though coarsely ground, reduced to a gelatinous mass, and in this form it is comparatively innocuous so far as existing pyrosis is concerned—at least such is my experience.”

Seeing the importance of cookery, the occupation of the next patient ought to have preserved her at least from the results of bad art. But the occupation may be baneful, as well as its products.

CASE XCII.¹—Elizabeth P—, a cook, aged 26, came under my care at St. Mary’s, July 30, 1852, for pain in the epigastrium, increased after meals and by pressure. She had also frequent attacks of morning waterbrash. Her tongue was white, but otherwise she seemed in good health; the catamenia and the evacuation of the bowels were regular. She was blistered on the scrobiculus cordis, and took fifteen grains of bismuth three times a day, and broth diet. On the 7th of August, she was well enough to eat a mutton-chop. On the 9th, the bismuth was left off, as the local symptoms were relieved; and on the 18th, there being no return of waterbrash, she was discharged.

¹ Case CXIV. in 2d edition.

The exposure to heat involved in the occupation of a cook, produces general congestion of the portal system, and an after-exposure to cold draughts inclines to a catarrhal condition of the stomach. Hence arise slow digestion, oppression at the epigastrium, and a feeling of faintness, which often leads to dram drinking. A further stage, more certain if this desire for alcohol be indulged, is pain immediately after food, and then pain on pressure.

Observe the use of external local treatment. This was resorted to in the case of Elizabeth P—, because there was pain on pressure as well as after meals. The pain on pressure is an evidence, though not truly an absolute proof, of the existence of anatomical lesion, either continuous congestion or thickening or ulceration. And I find that where it exists local blistering does good, and leeching more good. Even when it is not made out in a clearly defined spot, I am still inclined to suspect, in patients affected with water-brash, such a condition of tissue as is capable of being renewed to a more normal one by the alterative action of counter-irritants. For so many cases occur, like those which follow, where water-brash is associated with indubitable signs of local lesion.

In this, for instance, there was not only the peculiarity of the pain running backwards to the spine, but also a blood-stain in the mucus to show a solution of continuity in the capillary blood-vessels.

CASE XCIII.¹—John N—, aged 35, a painter, but without any signs of lead poison exhibited in the color of the gums, was admitted to St. Mary's April 10th, 1855, suffering from waterbrash, sometimes of a sour character, and sometimes alternating with vomiting of intensely sour greenish liquid. After he had been in the ward a few days it was observed that the vomit contained tawny mucus like that expectorated in pneumonia, and sometimes streaks of blood. He had also pain running backwards from the pit of the stomach to a spot between the shoulders, which pain was increased by pressure of the finger on the cardiac region. When he was at his worst the water-brash was least marked, but still it was a feature of the disease. Pepsin gave no relief. Hyposulphite of soda was tried without benefit. A blister to the epigastrium made him better for a couple of days after it, but he then relapsed. Most advantage seemed gained by the application of a few leeches to the epigastrium. He became an outpatient on May 13th.

In the next the blood evidently came from an ulcer.

¹ Case CXV. in 2d edition.

CASE XCIV.¹—Sarah G—, aged 33, a housemaid, was admitted to St. Mary's under my care August 22d, 1857. She had been an out-patient with unaccountable languor and anæmia, which was at last detected to arise from loss of blood by the alimentary canal. After admission it was found she had also waterbrash, and pain on pressure of the pyloric region. And then the locality of the injury in the stomach was fixed by her vomiting blood, both red and brown. The hemorrhage was stayed by means of acetate of lead and opium, and then the waterbrash seems to have got worse. It was considerably relieved by iced milk and by bismuth, but more by a blister. A grain and a half of sulphate of copper daily, which was given for a fortnight, seemed to act as a tonic and enable her to digest better, quicker, and with less pain. She was still taking it when she was made an out-patient again on October 16th.

It does not appear that the fluid ejected by the brash was ever bloody, thus showing that it does not come from the stomach, as sometimes represented, but from the œsophagus.

I have never tried sulphate of copper in simple waterbrash without hæmatemesis, but its beneficial action in this case would seem to offer an encouragement for doing so.

In the history of John N— (Case XCIII.) it is mentioned that he was a painter. Though no blue line in the gums denoted the still presence of lead in the body, I am not sure that we can quite acquit that subtle poison of causing the disease. In the following instance the accusation was brought by the patient himself:—

CASE XCV.²—Mr. Edwin S—, aged 30, a master painter and glazier, came to me July 7th, 1862. He suffered from excessive waterbrash, bringing up sometimes upwards of two pints of clear fluid in the course of the night and early morning. Sometimes this was relieved by vomiting. The matters vomited were acid and frothy, and continued to ferment and swell after being brought up. I had no opportunity of searching them for *sarcina ventriculi*. He had also often heartburn about two hours after eating. His tongue was unnaturally red and clean.

These evils, he said, were always much aggravated by anxiety in business, and it was for such aggravation that he consulted me. But he had suffered in the stomach more or less from boyhood, when he used to work with lead paint.

I gave him half a drachm of hyposulphite of soda daily, and fifteen grains of bismuth every night. In a few days with the medicine and rest he was better, and I prescribed some iron next with the bismuth. I had no opportunity of seeing more of the case, as his family doctor did not send him again to me.

¹ Case CXVI. in 2d edition.

² Case CXVII. in 2d edition.

The hyposulphite of soda was administered as an agent to prevent fermentation. I cannot say whether it was effectual or not in this case, as the patient did not vomit afterwards; but I have thought in others that it seemed to effect its intended purpose. That purpose, however, must be well understood to be a very limited one, for it does not cure the cause of the fermentation, namely, the slowness of digestion which retains the contents of the stomach so long as to ferment and communicate their fermentation to new arrivals. This cure must be effected by invigorating the vital energy of the failing organ.

The violent shock to the vitality of the mucous membranes in cholera will sometimes leave behind it a condition of stomach productive of waterbrash.

CASE XCVI.¹—Joseph W—, a laborer, aged 42, admitted to St. Mary's October 27th, 1854, had gone through an attack of choleraic diarrhœa in August, and since that time had not digested his food properly. The epigastrium was tumid and tympanitic on percussion. The tongue was large, flabby, and red, as if flayed. For the last three weeks previous to admission he had suffered from attacks of waterbrash. He was treated with gr. xv of bismuth three times a day, but was not considered ill enough to remain as an in-patient beyond November 1st, so that I probably saw him only once.

An operating cause of similar nature is dysentery.

CASE XCVII.²—Mr. Henry M—, a man of middle age, had several attacks of dysentery in Australia, and has never been quite strong since. He suffers from diarrhœa from the slightest error in diet. It was one of those attacks, brought on by taking a cup of bad coffee at a coffee-shop, that induced him to consult me. I gave him sulphate of copper and also bismuth, which both he said had done him good before. On inquiry I found that he very frequently suffered from waterbrash in the morning and during the night, though very careful of his diet. He traced this to the dysentery, and both to spirit-drinking, which he felt sure predisposed people to dysentery in Australia. (*August 2d*, 1860.)

It is also sometimes associated with phthisis pulmonalis, and then the defective nutrition which it implies brings on a condition of general degeneration. This is important from the possibility which exists of staying the degenerative tendency, and so arresting the downward course of the phthisis by attention to the stomach and œsophagus.

¹ Case CXVIII. in 2d edition.

² Case CXIX. in 2d edition.

CASE XCVIII.¹—William J—, aged 21, a carpenter, on admission to St. Mary's, August 21st, 1857, was much emaciated, and presented indubitable signs of solid tubercle in the upper lobes of both lungs, of such duration as to have made the upper ribs flat and immovable. The date of his consumption, from the period of his having "caught cold" and spat blood, was too years. Latterly he had suffered from waterbrash of a morning. It was difficult to make out whether he had pain in the epigastrium, as there was stich in both sides of the waist, which had its origin in the pulmonary disorganization.

After a few days of treatment by cod-liver oil and iron the albumen disappeared from the urine, and then the patient began to gain weight. Between the 28th of August and September the 5th he increased two pounds, and by the 12th one pound more. The extent of further increase is not noted, but he was bettered enough to leave hospital on October 3d.

The disappearance of the albumen from the urine shows that the derangement of the kidneys was only temporary. But in pulmonary consumption we find such temporary derangements soon end in permanent disorganization, if they be allowed to become ingrained.

It may be observed that in several previously quoted examples the supervention of waterbrash has been at the period of the normal cessation of the catamenia. It is also apt to follow upon such states of body as cause the arrest of the periodical evacuation in younger women.

In the following case there was joined to arrest of the catamenia an occupation which, as we have already seen, also tends to produce derangements of the upper organs of digestion.

CASE XCIX.²—Ellen R—, a cook, aged 22, admitted to St. Mary's November 4th, 1856, had been getting ill gradually for some months, at first suffering from feverishness, headache, and constipation, then finding her monthly periods arrested, though she still had leucorrhœa and pain in the back at the time when they ought to appear. The last-arrived symptoms were a dribbling of saliva from the mouth, and on rising in the morning a gush of clear watery fluid from the œsophagus. This fluid was sometimes made acid by the admixture with it of some of the contents of the stomach ejected by vomiting. She once also, while in hospital, threw up some greenish fluid (? altered blood).

She was treated with bismuth and ultimately discharged well.

Green vomit may arise from the admixture of bile which has regurgitated through the pylorus. This only happens after violent

¹ Case CXX. in 2d edition.

² Case CXXI. in 2d edition.

retching and straining, and the bile may be recognized by its bitter taste. It may also arise from the admixture of blood altered by the gastric juice, like the porraceous stools of dysenteric babies; and in such case there is likely to be very little straining and no bitter taste. The notes are not full enough to decide of which nature Ellen R—'s vomiting was, probably the latter, as bilious vomit is rarely joined to waterbrash. Indeed, bile is seldom thrown up in chronic diseases, and appears rather a guarantee of a considerable amount of health. It shows that a fair amount of hepatic cells are active and vigorous, which is not the case in severe illness.

In nearly all the cases I have quoted waterbrash has occurred in young or middle-aged persons. And perhaps this fairly represents the habits of the disease. Yet it is not unknown in the old, as the following instances will show, and show also that its cure is not to be despaired of even in them.

CASE C.¹—In May, 1848, R—, a farmer, came under my care for waterbrash, from which he had lately begun to suffer. He had also occasional attacks of vomiting. His age was about 70. He got well on bismuth. I saw him again in 1851, for some pain in the pyloric region of the stomach without waterbrash. However, there was no cancer, for I recollect seeing him several years afterwards in the streets at the time of the cattle-show.

CASE CI.¹—Mrs. B—, aged 66, was under my care in July, 1861, for waterbrash, accompanying indigestion brought on by anxiety of mind in nursing a consumptive son-in-law.

CASE CII.¹—Mrs. A—, aged 60 (but older than her age reckoned by annual revolutions of the sun, for the catamenia had ceased eighteen years), consulted me in August, 1863, for indigestion, marked by waterbrash occurring at various times of the day, not confined to the morning.

CASE CIII.¹—Mr. Thomas S—, aged 72, was sent to me by Dr. Ellison of Windsor, January 26th, 1867, respecting severe pyrosis which had on the present occasion afflicted him upwards of six weeks. It occurred daily and was getting worse; he had several times brought up as much as two and a half pints in twenty-four hours. The sensation was described as of something working in the right side of the epigastrium, and then there was suddenly and forcibly ejected a great jet of liquid. It was almost always quite clear and tasteless, and resembling saliva in appearance. There was often pain at the cardiac extremity of the stomach half an hour before the supervention of the brash, by which it is alleviated.

Mr. S— was a burly man of rubicund healthy aspect, but he said he had been subject for more than a quarter of a century to this

¹ Cases CXXII., CXXIII., CXXIV., CXXV. in 2d edition.

waterbrash from time to time ; never, however, so bad as during the last December and the January when he came under my care.

I desired him to come again on the 30th, and to bring with him some of the pyrotic fluid collected. In the mean time I prescribed—

R.—Quiniæ sulphatis gr. iss,
 Strychniæ hydrochloratis gr. $\frac{1}{20}$,
 Succæ limonum q. s. ad illa solvenda,
 Aquæ ad fl⁵viiss,
 Sps. rosmarini fl³ss.
 Fiat haustus ter die sumendus.

On the appointed day he returned, but without the expected morbid specimen. During the first thirty-six hours he brought up a good deal, and he thought there would be time enough to collect it afterwards. But after the fifth dose of the medicine a great explosion of flatus occurred, which continued for several hours, and since then his disease had quite disappeared.

I hear to-day (April 3d) from his son-in-law that Mr. S— continues quite well. He has taken the medicine from time to time, though irregularly, ever since I saw him. So I say he has had quite enough of it.

In October he had a short and not severe relapse of waterbrash, after travelling in a cold railway carriage. There was some mucus in the ejected fluid. I ordered him ten grains of kino powder thrice a day, which seems to have been sufficient, as I have no more notes.

The following case, on the other hand, is exceptional from the youth of the patient.

CASE CIV.¹—Miss S—, aged 15, an undergrown girl, was in my hands in July, 1858, for waterbrash accompanied by a feeling of oppression at the epigastrium occurring when the stomach was empty, and relieved by meals. She was weakly, and retained the insignia of former ill-health in the shape of scrofulous scars in the neck.

In this last example mention is made of the relief which some persons affected by waterbrash experience on taking food. This so frequently occurs in heartburn, and so rarely in ulceration, that I am disposed to view it as an evidence that the waterbrash does not, where it is found, depend on any serious anatomical alteration of tissue.

I have never seen it amount to "bulimia." The patients want to eat often, but they are not often hungry, and they do not want to eat much. I cannot recognize the truth of the statement made by some writers, that in digestion leads to bulimia, as I understand the term.

¹ Case CXXVI. in 2d edition.

It is a relief which may be prudently allowed, so that care be taken that what is eaten be easily digestible. Indeed, a judicious management may turn it to a means of cure by preventing the overloading of the stomach—by “spoiling the meals,” as it is technically called.

The treatment of waterbrash has been inferentially detailed in the histories given. It consists of sedative alkalies, and the best are those which lie longest undissolved, such as the subnitrate of bismuth. I give this in doses of from ten grains to half a drachm, either alone in a powder, or in a draught with bicarbonate of soda and hydrocyanic acid. The soda I give where there is much acid rising, the hydrocyanic acid where there is local pain on swallowing or on pressure.

In the robust old gentleman described in Case CIII. it will be seen that quinine and strychnine alone effected a cure. They should therefore not be omitted as part of the treatment, at least, after the more pressing symptoms have been palliated by more special medication. They are direct restoratives, whereas, bismuth is only an indirect restorative.

Kino and opium powder is also a good astringent to the upper part of the *primæ viæ*, and hardens the over-sensitive nerves of the *œsophagus*, but I cannot lay hand on any cases in which I have used it alone.

Iron is useful in anæmic cases. The red rust goes very well in a powder with the bismuth, and may perhaps render any other tonic superfluous.

The local application of leeches and blisters must depend on our diagnosis. They are of use in those instances where there is pain on pressure elicited by the finger rather than the palm of the hand—not otherwise, I think. The water-cure by compresses usually does harm; it renders the part more sensitive, and the local application of cold is too depressing.

In food all insoluble matters (such as those consisting chiefly of cellulose, chlorophyll, and raw starch), waxy potatoes, peas and beans, cucumbers, sodden pastry, new bread, half-cooked porridge (according to Dr. Morgan in the letter quoted page 142), and the like, must be avoided. Fresh meat-broth, beef-tea, milk guarded with lime-water, must be the food trusted to. I have found raw oysters well borne; but they must be quite fresh and well chewed.

SECTION III.

Spasms.

Pain in the epigastrium, resembling that produced by cramp of the voluntary muscles, has been already alluded to, and its pathological bearings discussed, so far as relates to acute indigestion (page 28). Sometimes they are induced without any immediate internal cause specially acting on the stomach, such as the ingestion of food, but by a catarrhal condition becoming chronic, and acting as a constantly present source of vital depression. Of such sort is the following example:—

CASE CV.—Mrs. R—brought a letter from Dr. Wilson, of Alnwick, whose patient she was, February 18th, 1868. She was the mother of eight children, and 48 years of age. For three years she had suffered from indigestion of a mild character, principally characterized by weight at the epigastrium, especially in cold and damp weather. During the last year or so there had been superadded attacks of spasmodic pain across the epigastrium, generally coming on towards evening, and lasting two or three hours. These spasmodic attacks were preceded by a feeling of great languor and sleepiness for several hours, and sometimes by an eructation of stringy mucus. They were stated to come on about every ten days or a fortnight. Bismuth had given her some relief.

There was no pain on pressure of the epigastrium. Ordered quinine and strychnine twice a day, and for the first four days three grains of aloes and myrrh pill every night. I advised also that she should adopt a drier diet than she had been accustomed to.

She took the quinine and strychnine a very little time, and did not resume it again, as she continued free from the spasms for a year and a half. I heard, however, that in October, 1869, she had a severe attack during a menstrual period.

In all chronic catarrhal conditions a watery diet is deleterious.

The influence of climatic changes is still more marked in the next case.

CASE CVI.—Thomas C—, aged 40, a manufacturer in Somersetshire, came to me March 21st, 1860, complaining of pain at the pyloric extremity of the epigastrium, during the period when the stomach is empty. Attributing it to atony and flatulence. I ordered him small doses of quinine and strychnine. A few days afterwards I saw him again, no better, and this led to further investigation of the case, when he told me it would sometimes come on suddenly quite irrespectively of the fulness or emptiness of the stomach, and from causes apparently quite irrespectively of the digestion. As an instance, he mentioned being at a small theatre, and a draught of air from

opening the door of the box brought on a paroxysm, which lasted several hours. It appeared also that he was subject to intermittent neuralgia of the brow, and this seemed to alternate with the pyloric pain.

I desired him to take five grains of quinine at noon, at 4 in the afternoon, and at bedtime, the periods when his attacks usually came on. He bore the quinine well, without the occurrence of cinchonism; and while he was in London it seemed to keep off his pain in the stomach. But a return home brought back his ailments, for he writes on April 19th that he had even increased the dose of quinine to ten grains without experiencing complete relief, though he sometimes fancied the larger dose touched the pain. It did not cinchonize him. I then desired him to take $\mathfrak{m}ij$ of liquor potassæ arsenitis in \mathfrak{ss} of decoctum cinchonæ three times a day. I urged also his leaving home again for a few weeks. Towards the end of June I heard from him again that the arsenic had been quite successful, and that he felt well enough to undergo a course of rifle instruction at Hythe. This seems quite to have confirmed his health, for he promised to write if a relapse occurred.

In the next the regularity of intermittent was more conspicuous.

CASE CVII.¹—In November, 1857; I was consulted by Mr. J. W. W—, a young looking man of 40, concerning the occurrence at intervals, sometimes regular and sometimes irregular, of a violent “spasmodic pain,” as he called it, in the epigastrium. Its usual time of invasion was between three and four o’clock in the morning, after going to bed in perfect health. It would last an hour or two, and then cease with the eruption of considerable sweating. It was worse towards the right side of the epigastrium. His tongue was clean, and he had habitually two natural solid stools a day. He had never had ague, but his house was buried in tall trees in a damp valley in the west of Shropshire, and even he allowed it to be ill drained. One of his children had died of low fever. He had just had a more than ordinary severe attack of spasms, during a night journey by rail. His aspect, however, was that of perfect health, and there was not a trace of tenderness in the abdomen.

I desired him to take two grains of quinine in a little whiskey twice a day for three weeks at once, and in future to take the same course for a week whenever he returned home from a temporary absence.

Early in 1858, he came to report that the treatment was completely successful, though he had in the meanwhile broken an arm; and later in the year I had a message to the same effect.

It is characteristic of this neuralgic pain that it is not developed by external pressure or by food, and that there is no tenderness of the epigastrium. By this it is distinguished from a kind of acute pang, by which the wearing pain of ulcer is sometimes diversified.

¹ Case CXXXIV. in 2d edition.

These cases may also be usually distinguished by the entire absence of all other gastric derangement, or the indication of any such derangement in the general health, by the intermission of the pain and its entire absence during the intervals, or by the previous presence of other proofs of ague poison.

Under the above-mentioned circumstances it is better I think, to give the quinine alone without acid. It is wanted not to be absorbed immediately and entirely by the stomach, but to act leisurely on the whole expansion of the nerves of the alimentary canal.

Arsenic is sometimes more rapidly and decidedly beneficial than quinine.

CASE CVIII.—Miss M—, aged 22, came to me January 26th, 1869, complaining of pain in the epigastrium, arising suddenly and irregularly without any apparent exciting cause. It was entirely unaffected by food or by abstinence, was not brought on or increased by pressure, and seemed to have no impression on the general health as indicated by the tongue, state of the bowels, or regularity of catamenia. It had commenced after her return to London from an autumn visit to Felixston, a malarious district of Essex, and had gradually gone on getting worse, till it was nearly daily. She had, by medical advice, taken purgatives. I desired her to take $\mathfrak{m}\text{iv}$ of *liquor potassæ arsenitis* three times a day, and to come again in a week. On February 1st she came and said that since taking the drops she had felt no pain; so I reduced the dose to $\mathfrak{m}\text{ij}$, which she continued for ten days. On May 9th, she was still quite well.

Spasmodic pain of this kind, dependent on irregular malarious influences, is a sufficient evil in itself to be matter of serious consideration. But beyond that it may also prove fatal, and that without any organic change, or tissue lesion; just as in some rare instances is the case with regular ague.

CASE CIX.—Captain S— served in India during the mutiny, and was exposed to great hardships; he had intermittent fever and dysentery several times, twice sunstroke, and once "landwind" (a transitory idiopathic tetanus). He, himself, elbuded together these various complaints in telling me the tale; and I am inclined to think he was right in his pathology. When first invalided home he got well enough to hunt twice a week or so, but took, as a matter of course, occasional touches of ague. He had also some pains in the head and limbs, which, coming of a gouty family, he attributed to gout; but there were none of the distinctive evidences of gout exhibited in thickened knuckles or deposit in the cartilages of the ear. I do not think he really was gouty. In the autumn of 1867, being in Ireland with his

regiment, he began to suffer from occasional pain in the epigastrium, neither accompanied nor followed by any nausea or vomiting. Sometimes it lasted only a few minutes, sometimes would continue bad some hours. It gradually became periodic, and at last came on regularly every night. But at all times it might be brought on by sundry internal causes, some of which seemed very trivial, such as washing the hands in cold water, for example. Eating or drinking, whatever the quantity or quality of the food, never seemed to make any difference, for good or for evil. It lasted from one-half an hour to two hours; sometimes there was no other symptom except pain; at other times there were rigors, and when the pain was very severe, sweating afterwards. It often ending quite suddenly with an explosion of wind from the stomach, rarely with vomiting. He had been under much and various medical treatment; but he never seems to have given any rational plan a fair chance; for if it did not happen to be accidentally followed by a cessation or remission of the attacks he gave it up; and if there was a remission, succeeded by an unusually severe paroxysm, as will happen in intermittents, he attributed the paroxysm to the medicine. I saw him first at the end of September 1868, when the attacks were somewhat irregular; so that I managed to catch him during one on a November afternoon. The expression of pain in his face was very intense, as he lay on the sofa rubbing the epigastrium. The part affected was somewhat distended and tympanitic.

The breathing was quite normal throughout, and the pulse was in its usual condition. I word the last clause thus, because there was at all times a murmur with the first sound of the heart loudest at the organ's base. In about half an hour the agony began to abate; he eructated some flatns, and was better. I gave him quinine, arsenic, iodide of potassium; but he never fairly tried any of them. Mr. Tegart ordered him some bismuth and prussic acid, and I think he was more faithful to that than to anything else. In November it was agreed, in consultation with Mr. Tegart, that he should reside in a more genial climate than England during the winter, and he accordingly went out to Mentone. He was much better at first, but soon the attacks returned, and he determined to set off home in February 1869. He had a terribly violent and lengthened paroxysm in Paris, and got to London worn out and disheartened. Several milder followed, and then one of great anguish, in which he died, exhausted. I did not witness any of these more formidable attacks, but Mr. Tegart did, and he described them as only differing in degree from what has been depicted above. His age at death was 35.

The death seemed to have been due to pure agony.

In some cases of malarious spasms a peculiar local distension, apparently from partial paralysis, of the bowel will sometimes occur. To the fingers the impression is conveyed of a round hard tumor, and the distended membrane is drawn so tight as to pro-

duce on percussion a dull sound.¹ This paralysis survives the pain, and often causes much needless anxiety by its persistence. But it goes away in the end. The following is an example:—

CASE CX.—Mrs. C—, aged 40, lived in a house near the Thames, the ventilation of whose garden and drainage had been violently interfered with by a high railway embankment. Since this invasion she had been weak in health, though she had never actually had ague. She came to me Lady-day, 1869, complaining of pain and a sensation of movement in the right hypochondrium, which she had felt for about six weeks. The pain, especially at night, would come on in paroxysms, and had assumed an irregular periodical character. The urine was scanty and high-colored, the action of the bowels regular, and the excretion of natural form and color. She was somewhat anæmic, and the catamenia were reported as pale, though frequent in time. On examination of the abdomen, there was evident a globular swelling, dull on percussion, somewhat below the natural situation of the gall-bladder, so that I felt doubtful whether it were not that viscus. However, she clearly wanted iron, quinine, and a mild sedative, such as henbane, so I gave her those drugs, and asked to see her again in a week. By that time the swelling had altered its position, and was in the right hypogastric region, resembling what is often diagnosed as a cæcum full of feces. I then ordered two grains of quinine thrice a day, which was slightly increased in April, towards the end of which month the lump gradually disappeared. She then went to Germany and got quite strong, but, returning home in the autumn, fell off in health, and came to me at the end of September about a general flatulent distension of the abdomen. There was no localized lump then.

These lumps are much injured by purgatives. I have known even a nightly dose of a drachm of castor oil aggravate the pain and enlarge the swelling. A medical man told me that when a student he was nearly killed by a fashionable physician who dosed him with calomel till he accidentally escaped into the country, where he was gradually recovering for several months. As to the quinine, a long continuance seems to act better than those heroic doses which cut short regular ague. Even much smaller doses than usual seem sufficient after a time. In the case of a lady who had become affected with epigastric neuralgia from standing on the ice, I ordered quinine and strychnine in the usual doses, without curing her. Just as I was going to change the drugs for arsenic,

¹ Just as a stomach, temporarily dilated with air, will do. The tight stretching of the membrane prevents the contained air from vibrating, and you get only a short dull sound; whereas with a loose membrane the vibration is communicated to the large body of air, and you have tympanitic resonance. This observation of Skoda's should be always kept in mind when examining the abdomen.

she went to a homœopath, whom I accidentally came across at an evening party. He told me he had continued the same remedies I had ordered, but in very much smaller doses, and the patient had gotten quite well.

Attacks of temporary dilatation from paralysis, with spasmodic pain, are apt to occur in those who have habitually kept the vital processes at a low ebb by the abuse of alcoholic liquids without drunkenness.

CASE CXI.¹—An old man-of-war's-man, turned wine merchant, was sent to me by Mr. Way, of Portsea, February 18, 1867, on account of spasmodic pains, which occurred from time to time in the epigastrium. There was no pain to be produced by pressure on the affected part, and indeed, "when the spasms are on," pressure palliates them, he said, and he lies with his stomach firmly driven against the edge of a table or chair with considerable relief for a long time together. They always pass away with a great explosion of wind. Bad attacks of these spasms came on about once a week, but he had often slighter paroxysms at night between times. He had fallen away in flesh a good deal, and the lips had grown paler, and the cheeks patchy in color; his tongue was pale, wet, and smooth; his bowels were open daily; the urine was pale, acid, of the specific gravity 1.015, not albuminous.

His habits have been usually active, as he is fond of shooting and sea-fishing, and has opportunities of indulging his tastes. His worst custom seems to be that of taking occasional schnaps of spirits in the evening, but he cannot be called an intemperate man.

He was ordered two grains of quinine and $\frac{1}{20}$ of a grain of strychnine dissolved in lemon-juice twice a day, and told to eat as much flesh meat as he could find an appetite for, and to abstain from spirituous liquors.

I also told his wife to have ready for him in case of spasms as much bicarbonate of soda as will lie on a florin, the same quantity of magnesia, a teaspoonful of sal volatile, and ten drops of laudanum. He came to me a year afterwards to tell me how much better he was for leaving off spirits.

The pain may be as easily relieved by strong alcohol as by a diffusible stimulant, but care must be taken lest a habit of dram-drinking be thus encouraged; for, as we see, it is among those who are too much inclined that way that periodical spasms occur. I therefore prefer to order an officinal draught to the vague recommendation of a glass of spirits when they feel bad, which medical men often give. The strengthening of the stomach by nerve-tonics is the best drug treatment.

¹ Case CXXXIII. in 2d edition.

CASE CXII.—T—, a Swiss innkeeper, aged 44, has been, up to the last few years, in the habit of taking his food as foreigners do, in one light and one large meal in the twenty-four hours: but since he has lived in a narrow London street, and had much responsibility thrown on his mind, he has felt the need of increasing the number of his solid meals. He has not, at the same time, decreased their quantity or quality, and the consequence is that the stomach, as examined by percussion, is enlarged, its walls are flabby and dilated with flatus. The same condition does not extend to the ilia or colon, and so he is not pot-bellied, but of personable aspect. What brings him to me, is that every fortnight or three weeks, usually after some slight excess in alcohol, he has attacks of spasmodic pain in the epigastrium and round the waist. These attacks usually last about sixty hours, and pass off with explosions of wind. They are often preceded by headache in the temples, by eructations of acid matters, and by constipation of the bowels. The stools were scanty and clay-colored at these times. His physician, who had attended him in several of these attacks, confirms his account of them, and adds that they are relieved quickest by the application of warm poultices to the epigastrium, and opium internally. The effect of opium is to relieve the pain gradually, and that relief is followed by action of the bowels and restoration of bile to the stools, which previously had been clay-colored and scanty in general. The gradual relief of the pain, the absence of jaundice, and the non-appearance of gall-stones in the subsequent feces, distinguish these spasmodic attacks from gall-stone colics.

I advise temperance in the use of alcoholic liquids, frequent meals, a restricted nutritious diet, and two grains of quinine with one-twentieth of a grain of strychnine in lemon juice twice a day. (*February 6th*, 1868.)

T— got well during the spring, and, doubtless in consequence of improved habits, remained free of his spasms till the succeeding winter. But the festivities of Christmas were too strong a temptation, and he indulged in several drinking bouts. The consequence was that he came to me February 15, 1869, reporting four rather severe attacks of spasms. I ordered a resumption of the treatment. I have not seen him since, but Christmas has not come yet.

SECTION IV.

Gripes.

Sometimes, instead of pain caused by food remaining in the epigastrium, or extending upwards towards the fauces, it descends to the lower bowels and is felt as a twisting sensation about the umbilical and hypogastric regions. This is usually followed and ended by the passage of one or two light, loose, often frothy stools, in which may be not seldom detected articles of diet swallowed scarce half an hour before.

Patients do not call this "diarrhœa," for it is excited only by

food, and ceases immediately with the evacuation. They usually describe it as "looseness." One gentleman, who had been reading the ancients, denominated it "lientery," and I dare say it is what our forefathers in art meant by that word.

It will be seen by the cases used for illustration that it is usually dependent upon some morbid condition of the lower bowels, either the last part of the ilium or the colon. Why a lesion in that situation should cause the contents of the stomach to pass through the pylorus too rapidly, when lesions of the stomach itself, duodenum, liver or jejunum, do not do so, though much nearer, is not clear.

CASE CXIII.—A. P—, a wine-merchant, aged 29, came to me February 24th, 1868, with the following story: Up to three years ago he had taken the travelling department of the firm, and had always enjoyed good health. Then they got into difficulties, and had to go through the bankruptcy court. Then they set up afresh, but this time his brother undertook the travelling, and he the home duties, which imply a considerable amount of exposure to the fumes of wine and a good deal of testing in sips throughout the day. He has also less exercise than of yore. The consequence has been a deterioration of health; he has become almost impotent, so as to feel no desire for his wife, and no power if he had the desire, for three months together; after breakfast, and again in the evening, a depression of spirits and an unaccountable dread creeps over him. But what troubles him most, and seems to him the primary movement in his case, is a daily diarrhœa in the morning before breakfast. He wakes early with itching at the anus and flatulent distension of the bowels; there is an explosion of wind, and then follow griping across the navel, and several loose motions of a light yellow color but natural odor. This sometimes returns during the day at very inconvenient times, such as during a railway journey, and then if by an effort he is able to restrain the inclination, the consequent stools are much more solid and are passed without much griping. He considers this diarrhœa the primary movement in his disease, because when it is worst his other morbid feelings are thereupon aggravated, and in point of time seem to follow upon it.

He complains that when he goes to doctors they prescribe opiates for him, which give immediate relief, but require to be increased in dose rapidly, or else the benefit gradually passes away. He feels that he is getting worse, though on this Monday morning I saw him at his best.

Advised to take a shower-bath every morning; to restrain forcibly the passage of feces till after breakfast, or later, if possible; to ride into London to business, instead of coming by train; to make arrangements with his brother to divide the labor differently, so that each of them may from time to time have a holiday from the fumes of wine, but to take no physic.

He required no further medical attention.

The following example presents that which is the most unfortunately common shape in which this ailment is found.

CASE CXIV.¹—On September 29th, 1857, I was consulted about Mrs. B—, aged 45, who complained that immediately after taking food a pain came on in the centre of the epigastrium, which gradually proceeded downwards with a twisting wavy movement, till within half an hour it ended in a motion of the consistence of pea-soup, which varied in appearance according to the nature of the food it followed, and often smelt of that food in case of its having any characteristic odor. There was no pain on pressure at the epigastrium, but in the right iliac fossa there was. Ulceration probably existed in that locality; and the scars of juvenile abscesses in the throat, together with consolidation of the two apices of the lungs, made almost certain the conclusion that they were of a tuberculous character. Sulphate of copper, morphia, logwood, and bismuth, were tried in succession, with only the merest temporary advantage. She soon afterwards died.

The rule is, doubtless, that in tubercular cases gripings of the belly should soon terminate in phthisical ulceration and diarrhœa. Yet there are instances in which that termination is held off for a very long time, of which the following is an example:—

CASE CXV.—Miss P—, aged 30, first came under my care in February, 1868. She complained of a frequent pain of a griping, depressing character, coming on usually of a night in the left side of the abdomen below the navel. The spot was not fixed, but it seldom travelled beyond the region which may be so described. When very severe it made her vomit, and sometimes hysterical. It was worse, but not most frequent, at catamenial periods, which were irregular and scanty. It was not then ever followed by diarrhœa, except she had taken purgatives by medical advice. There was no pain or pressure on any part of the abdomen. She had never suffered from cough or any pectoral complaint.

I gave her valerian, quinine, arsenic, and several other remedies without any beneficial effect. The only thing that seemed to do any good was henbane, in a dose large enough to produce a dimness of sight. In her this was about a drachm and a half of the succus three times a day. This drug seemed to act curatively, as well as palliatively, for in the course of the spring she got quite rid of her pain and went to the West Highlands of Scotland for the summer and autumn. She called occasionally during the succeeding winter and spring, but rather to report herself, than from illness, and was quite satisfied to manage her own health with occasional doses of henbane if the pain came on. But once I saw her for a temporary cough and sore throat, and then at her request I sounded her chest, but found no lesion. Her anxiety was caused by the fact of her mother having died young of pulmonary consumption.

¹ Case CXXXV. in 2d edition.

During the summer of 1869 she again went to the highlands. In August she began to suffer from diarrhœa. This at first was easily kept in check by chalk mixture and laudanum. Then in September she got a cough, and the diarrhœa got worse. I persuaded her to come to London; and, on examining the thorax, found a considerable spot of condensed crackling pulmonary tissue in the lower part of the upper right lobe. The gripings had ceased, but the diarrhœa was worse and worse. It is needless to describe the rapid breaking up of the pulmonary tissue, and the persistence of the diarrhœa in spite of remedies, causing death at the end of October. But what is of importance, is, her fixed impression, in spite of assurances to the contrary, that she should get well, grounded on the much less distress she experienced than when she had been previously ill.

In such cases as the above I fancy the pain at the first stages must be produced by the gradual degeneration of the glandular tissue into hard tubercle in the ilia: just as you have in the lung sometimes a very severe neuralgic sort of breast-pang in the early history of pulmonary phthisis.

By quoting examples of a fatal termination to tubercular ulceration of the digestive canal, I do not mean to imply that such is the necessary history of every case. Case LXX. is an instance to the contrary; but I do not find any mention there of the griping and emptying of the stomach immediately after the meals, as in Mrs. B—. And this I have generally found an omen of very bad import. In point of fact, it is not so much the diarrhœa as the effect of that diarrhœa upon the upper part of the digestive canal, especially upon the stomach, which proves so deadly.

Case LXX. shows that it is very wrong, when tubercular disease of the lungs exists, to despair of effecting a cure of the diarrhœa existing alone; but I must say I have never come across a case of a favorable termination in consumptive cases where the upper regions of the primæ viæ were affected by it.

However, in non-consumptive cases much more may be done in spite of chronicity and of the gastric complication.

CASE CXVI.¹—In September, 1858, W. J— put himself under my care. His age was 50. He had lived an active business life without any severe illness. But for the last three years or more he had become affected on the slightest provocation with looseness of bowels. This had gradually become constant, a pain coming in the epigastrium immediately after food and ending in a motion. Examination of the chest detected no lesion of the lungs.

¹ Case CXXXVI. in 2d edition.

I managed to check this with small doses of castor oil and opium, and extract of hæmatoxylum. But it recurred again in December, and then I found there was pus and a streak or two of red blood in the stools, and gave him sulphate of copper. This was soon effectual. In February, 1861, it again returned gradually, and I gave him bismuth for a month, but it did not stay the symptoms, and we were obliged to have recourse to his old friend sulphate of copper, which set him up again. In 1863 he came to consult me about a cough, but made no further complaint of loose bowels or epigastric griping. He is still alive and fairly well in 1869.

The streaks of red blood in the stools render it most probable that the lesion was in the colon, and the absence of any complaint of pain in the ilio-cæcal region confirms the diagnosis.

I am convinced sulphate of copper is the most effectual remedy in these cases. Next to it comes hæmatoxylum, and next opium. As far as immediate effects are concerned, perhaps opium should rank higher, but the good it does is by no means permanent.

By beginning with one-fourth-grain doses, sulphate of copper may be carried to two grains with safety.

The annexed case gives a detailed history of the origin of the disease in non-tubercular persons.

CASE CXVII.¹—J. B. C—, at 17 years of age, had a severe acute diarrhœa, brought on by the effluvium from an offensive drain in the house where he was at school. This was in 1858. From that time he became subject to frequent attacks of diarrhœa, brought on by very slight causes, and especially in June, 1861, had one when at college, which was dysenteric, that is, accompanied by sanguineous stools. After this his meals brought on pain in the epigastrium, which was followed almost always by a thick pulpy motion, in which he had looked for blood, but never saw any. In the long vacation he went to a hydropathic establishment, where he said he got worse and was half starved. Whether in consequence of that or the disease, he was very much reduced, perspiring at night and emaciating rapidly, and so weak that I went to visit him at his lodgings several times.

He had never suffered from cough, and was quite sure that there was no hereditary tendency to consumption in his family.

When I first saw him in November of the same year, I put him on hæmatoxylum for five days. It was of no use. I then prescribed

R.—Cupri sulphatis, gr. $\frac{1}{4}$,
Pulv. ipecacuanhæ co., gr. ij.
in pilulâ ter die.

The employment of this for six days removed the pain in the stomach, and reduced the motions to one after breakfast and one at

¹ Case CXXXVII. in 2d edition.

night, of a solid consistence and greenish-brown color. He then resumed the hæmatoxylum, which proved sufficient to restore his appetite and strength.

C— continued quite well and went into the army. In 1863, after a long review day at Aldershot, topped up by drinking a quantity of Moselle cup, he got an attack of diarrhœa, and, fearful of a relapse of his old complaint, he came up to see me in London. But it was easily stayed with a little chalk mixture and rest.

He called at my house in 1864, when I was ill in bed, to leave a card and say he had got a promotion, so that there is no reason to believe he has continued anything but well.

It is surprising that a state of bowel which has been so long coming on should be so readily and quickly cured. Such cases as these are very wholesome to the mind, strengthening it in faith that efficient treatment is discoverable, if we will only take the trouble to look for it.

Remark the extreme state of weakness indicated by night-sweats and emaciation. A mere looseness of bowel would not induce that, but only a looseness which secondarily affects the stomach.

The relaxation of the bowels is not always so immediate in time. Take the following instance.

CASE CXVIII.¹—Miss Louisa P— (age uncertain), in September, 1857, complained to me solely of general languor and pain at the epigastrium of an obscure character, and I put her on citrate of iron and Prussic acid, with milk and meat diet, and directed her to be careful not to press upon the pit of the stomach when sitting at her work of keeping large girls' school.* When I saw her again in October I found that the pain at the epigastrium came on about twenty minutes or more after food, that it went downwards to the bowels, and was followed by a soft, sometimes liquid, stool. I put her then on bismuth and iron, which she went on with to the end of the month and got well.

Sulphate of copper would probably have acted quicker.

This kind of griping in consumptive cases is aggravated by too poor a dietary, and indeed sometimes more nourishing food seems to contribute more than anything else to a cure.

CASE CXIX.—Mrs. F—, aged 31, put herself under my care, May 15th, 1867, on account of the excessive griping spasmodic pain in the epigastrium, followed by diarrhœa, which was induced whenever she took a hearty meal. This had made her quite fearful of eating, so that, by an exaggeration of medical advice, she had lived on gruel

¹ Case CXXXVIII. in 2d edition.

and slops, and had become excessively emaciated in consequence. It had been going on all the winter, and was all that she could be got to complain about of her own accord. But cross-examination brought out a tale of cough for the three last spring months, with expectoration, and sometimes streaks of blood in what was expectorated. Then an examination of the chest showed dulness on percussion and coarse crackling localized at the apex of the left lung.

I ordered her two drachms of cod-liver oil, to be taken three times daily in a draught of quinine and hydrocyanic acid, and desired her to eat the inside of a mutton-chop twice a day, and to have beef-tea instead of gruel. A few days afterwards, I found it advisable to add a few drops of laudanum to the draught. But the pain had ceased to be spasmodic already, and with the use of the amended prescription both it and the diarrhœa were stayed entirely; and before she left London at the end of May, she was able to eat as much as was required for her nourishment; she had ceased to sweat at night, and began to gain flesh and strength.

I heard from her at her home, in Staffordshire, from time to time during the summer. In July she felt as well as ever she did in her life, and wished to leave off medical treatment. But I urged her to take a course of the first ten days in each month at least.

SECTION V.

Weight.

This is a feeling like that often locally experienced at the beginning of sore-throat, coryza, influenza on the chest, leucorrhœa, gonorrhœa, or irritable bladder. In those diseases it gives notice that the internal lining membrane of the spot is red, swollen, soft, and beginning to be coated with adhesive mucus. In the more advanced stages, as soon as pus is formed, the sensation ceases.

In all these situations it is sometimes called "oppression," sometimes "tightness," sometimes "distension;" but I think the word I have chosen is the most commonly applied to the epigastrium. It is so in my notes taken from word of mouth.

Patients will sometimes say they feel as if they had eaten too much, but their account of their meals does not show such to be the fact. And in those whom we know to eat too much we do not find this feeling at all universal, as may be seen by reference to Chapter X. Besides, if the feeling arose from over-fulness of the stomach, it would be felt most when the stomach is fullest, namely, during a meal; but such is not their experience.

The first inclination, therefore, of the medical pathologist is to refer it, when complained of in the epigastrium, to the development inside the stomach of the catarrhal condition alluded to above.

And his inclination will be strengthened by the perusal in his note books of such cases as the following:—

CASE CXX.¹—In the Post-mortem Register of St. Mary's Hospital there is an account of the autopsy of Eliza Ann S—, who died November 25th, 1853, aged 14, of dyspnœa from diseased heart, consequence of rheumatic fever, and towards the end of her life albuminuria with dropsy. It is needless to detail the appearances of the heart and lungs, on which I am going to comment, except to say that they fully accounted for the illness and death. On opening the stomach its inner surface was found covered throughout with a coat of mucus of extraordinary thickness and toughness. Its transparency was stained by the admixture with it of a good deal of yellow-brown matter. The microscope showed this not to be bread-crust by proving the absence of starch granules, and rendered it probable that it was digested blood. The microscope exhibited also the presence of scattered specimens of sarcina ventricula. The membrane itself was stained with many spots of punctate congestion, and the principal contents of the stomach besides mucus was coffee-ground colored fluid of neutral reaction.

She had been under me in the wards for several months, and on referring back to the record of the case during life for symptoms in the epigastrium, I found frequent mention made of "weight," as complained of in that situation, and no other term ever used to describe the sensation. I find also that she very frequently vomited sour matters, and had a sour taste in her mouth; and that the vomiting and the weight embittered the poor little sufferer's last days. Her appetite was good, so that she took a variety of food, sometimes in restricted quantities, sometimes not; but neither dietary nor medicine seemed to alleviate the gastric symptoms.

The vomit during life had several times been examined by the house-surgeon for sarcinæ, and they were not found; nor was it frothy; nor had it ever contained the coffee-ground fluid found after death, but was intensely acid.

The natural conclusion is that the weight and other gastric symptoms were caused by the continually recurring congestion and pouring out of mucus in the parietes of the stomach. And the symptoms and post-mortal appearances were marked enough to make one view this as a typical case.

I must, however, in justice, tell that in twenty-three cases collected by Dr. Handfield Jones, in which an excess of mucus was found after death, no mention is made of weight at the epigastrium among the symptoms during life.² Possibly it was not considered of sufficient importance to make a note of. Possibly the diseases

¹ Case CXXXIX. in 2d edition.

² Handfield Jones "On the Stomach," p. 74, and "Medico-Chirurgical Transactions," vol. xxxvii. p. 109.

of which the patients died, most of them acute and painful diseases, masked even to the sufferers themselves the minor evil.

I may remark in passing on the difficulty almost universally presented by this last-named factor in the calculation, when an attempt is made to connect the post-mortal appearances with the phenomena recorded during life in all diseases which are not the immediate causes of death. Like other things, pain cannot be in two places at once (I speak of course metaphorically), and when you are having a tooth out, you fail to notice the operator treading on your toe. The greater ill hides the lesser.

Weight is most commonly felt towards the right side of the epigastrium, and no sensation is conveyed up the œsophagus towards the fauces. Now it is in the pyloric region, according to Dr. Handfield Jones, that the catarrhal state of mucous membrane commonly occurs, and I am disposed to attribute to the nerves of the pylorus, and to a morbid state of that part of the viscus, this peculiar gastric sensation.

In Case CXX. the lesion of heart was adhesion of the pericardium with enlargement. In the next instance, pure valvular lesion without enlargement, would seem to have been capable of producing a similar state, if one may judge from the symptoms.

CASE CXXI.¹—Ellen W—, aged 18, a domestic servant, was in St. Mary's, under my care for six weeks, from February 13th, 1852, and was again admitted in January, 1853, for a fortnight. There was a harsh systolic murmur, heard loudest at the level of the aortic valves, the sound fading away gradually towards the apex of the heart. The pulse was always from 105 to 120, and she complained of palpitation when asked about it. She was very pale and weak, unable to do her work, bursting into a perspiration when talked to, and having a violent hysterical fit when a patient in the ward had an abscess opened. But her chief complaint was of weight, sometimes amounting to actual pain, in the epigastrium, and of vomiting.

She was treated at first with small doses of *hydrargyrum cum cretâ*, and saline draughts. She got worse under this treatment, and the pulse remained quite as quick. She was then put on decoction of bark with quinine, and the pulse fell. Mustard plasters to the epigastrium seem also to have been of use. Then the weight at the epigastrium diminished, and the vomiting ceased; but coincident with that the patient began to have a cough; and as the expectoration of mucus from the bronchi increased, so the gastric symptoms were alleviated. Then she regained her color, got stronger, and

¹ Case CXL. in 2d edition.

heavier by a few pounds. The pulse went down to 84, and she was made an out-patient.

However, she was admitted again at the beginning of next year, and gave us a history of chronic invalidism. She had been allowed to lie in bed and indulge her feelings of languor. There was no cough, but she said that another mucous membrane, the vaginal, was affected, and she frequently had leucorrhœa. She complained of palpitation of the heart, but not of the gastric symptoms so much.

Remark here how the effects were produced now on one mucous tract, now on another; not on both at once, but in succession. The supervention of the bronchial relieved the gastric catarrh, and the leucorrhœal, brought on by lying in bed and coddling, succeeded. Such cases can seldom be cured in the short time which hospital necessities allow.

Mercurials seem very bad treatment, but just at that epoch somebody had been recommending them in gastric complaints, and I thought that such a one as this, if any, ought to be benefited.

A minor degree of weight at the epigastrium is sometimes produced where the heart is merely excitable, without organic lesion.

CXXII.¹—G. K. R—, a civil engineer, aged 33. September 26th, 1861. He suffers a good deal from palpitation of the heart, which is brought on by even the slightest mental cause, but not by any ordinary bodily exertion, and there is a feeling as if the heart beat irregularly at times. The stethoscope and percussion detect no abnormality of shape and sound in the organ, except the quickness of beat after a short examination. He is used to the palpitation, and what he would complain of is that when he comes out in the cold after breakfast, to go to his work in London from Greenwich by the steamer, he experiences an oppressive sensation at the pit of the stomach, which continues at least the greater part of the forenoon. The stomach feels as if a weight lay there, or as if it were tumid with wind, which on examination is found not to be the fact.

R— was directed to eat milk-porridge for breakfast, to wear thick flannel over the epigastrium, and to take four minims of hydrocyanic acid a quarter of an hour before food.

On the 11th of October he comes to me again, saying that all the local distress had passed away, and that he feels only weakness, for which he is ordered quinine and strychnine. He finds milk-porridge a very convenient breakfast.

This action of the cold air is just what one feels in nasal or bronchial catarrh. Flannel is a very good preservative, and acts

¹ Case CXLI. in 2d edition.

as a counter-irritant as well, in those who are unaccustomed to it.

The milk-porridge was intended to be a mass of even moderate temperature, in fact an internal poultice, which would at the same time be sufficiently nutritious for a man in hard work.

Hydrocyanic acid was designed to act on the whole of the pneumogastric nerve, inasmuch as it was through its chronic sensitiveness in the heart that this temporary condition of the stomach was induced,

More commonly still than diseased heart, diseased lungs produce that catarrhal condition of the lining membrane of the stomach which is indicated by the feeling of weight. The following is a typical instance:—

CASE CXXIII.—Ann G—, aged 23, had never been strong enough to go into service, or otherwise gain her own living, so she was kept at home with her parents. She usually suffered from cough in the winters, had shortness of breath on exertion, and was weak in the back. She was admitted to Victoria Ward, July 23d, 1858, with a “dull aching” in the right side of the epigastrium and waist, with “oppression at the chest,” and great “acidity” after meals.

She had previously been in Mr. Baker Brown’s ward on account of deficiency of the catamenia and a leucorrhœal discharge between times, but had not seemed to require special treatment, and was transferred to the general ward.

On examination of the chest there was found slight comparative dulness on percussion beneath the right clavicle, and increased vocal resonance. But the tubercular lesion then seemed to be in a dormant condition, as there was no cough, nor were there any rales audible to the ear.

General assimilation seemed to be but slightly affected, as on two occasions the urine was found of as high specific gravity as 1.030. But yet she got thin, lost her appetite, and was always thirsty, and had occasional shiverings and perspirations, such as are common in acute catarrhal conditions of a slight character. So it was clear that destructive exceeded constructive assimilation.

On the above ground she was put upon cod-liver oil and steel mixture, and wore an opium plaster on the right hypochondrium, while adjoining it a blister was applied. Under this treatment her appetite returned, the pain left her, and she slept well. She left St. Mary’s in the middle of August.

Doubtless in Case CXIX. the weather had considerable influence in determining the condition. In the next it seemed the sole factor.

CASE CXXIV.¹—Miss D—, aged 50, but old of her age (for the catamenia had ceased four years), requested my advice in November, 1856, for constipation, which was always worst in wet weather. But on inquiry I found that this was not all; she had flatulence and an oppressive sense of weight at the epigastrium, extending to the right hypochondrium, after meals, and it was this which was aggravated by the hygrometric state of the air. She lived in one of the little old-fashioned damp Cinque Ports, and a removal to Ventnor² for the winter made all the difference to her.

I am surprised in looking over my notes not to find flatulence more often associated with weight at the epigastrium. The patients so frequently speak about their being “blown out” that one expects it in every case, but manual examination of the abdomen does not detect it. I am led, therefore, to conclude that this feeling “blown out” must be mainly a subjective sensation. True, flatulence is usually associated with more purely neuralgic conditions, and does not, like the subject of the present section, lead to the diagnosis of catarrh. Moreover, the *sensation* of tumidity is by no means a marked feature in real tumidity. Patients often omit to notice it.

There was, however, flatulence in Case XX.³ along with a sense of weight, and again probably in the following:—

CASE CXXV.⁴—During the spring and summer of 1857 I had several visits from a thin withered old gentleman, T. S. S—. His principal complaint was of “weight” at the pit of the stomach, but he must also have suffered from flatulence, as I see that I have prescribed for some time charcoal and strychnine in powders, which I should not have done except for that symptom.

Costiveness is a very usual accompaniment, and in the following case benefit seemed to accrue from a purgative drug.

CASE CXXVI.⁵—Thomas K—, aged 45, an Irish manufacturer, asked my advice July 14th, 1857, for costive bowels. Confusing cause and effect, he attributed to that costiveness a constant “pressure” on the epigastrium, low spirits, want of sleep, and anaphrodisia. I gave him a prescription for five grains of aloes and myrrh pill, with $\frac{1}{12}$ th of a grain of strychnine every night, and desired him to take them for a week, and return to London to see me again at that time.

¹ Case CXLII. in 2d edition.

² There are two climates at Ventnor, the one, on the sea-shore, soft, and suitable for sore lungs; the other, upon the cliff, dry and bracing, though not cold, which is here intended.

³ Page 44.

⁴ Case CXLIII. in 2d edition.

⁵ Case CXLIV. in 2d edition.

To his surprise they had not acted as purgatives, but elicited matured stools. He was very much better in every respect, and continued to take small quantities of the two drugs till he was well.

The lowness of spirits which usually accompanies this sensation sometimes amounts to thorough hypochondriasis.

CASE CXXVII.¹—Mr. W—, aged 30, was brought to me by Dr. Dunfield, January 19th, 1866, on account of the persistency of a sensation of weight towards the right side of the epigastrium, coming on three-quarters of an hour after meals, by which he had been led to give up business since 1864. He was, however, none the better for giving up business. His nights were restless, and he was often woke up by headache. His spirits were at all times low; he had no actual delusions, but he took the gloomiest view possible of everything, and was inclined to be miserly in the management of his income, which was ample enough for his wants. The tongue was covered with a white fur with transverse cracks. The gums were edged with a pink line, but were not sore. The urine contained floating crystals of oxalate of lime. I advised him to travel abroad.

I suppose it must be from depression of mind being so often associated with discomfort in the pyloric region of the stomach or the right hypochondrium that we derive the term hypochondriasis as descriptive of that mental state—just as irritability of temper is called “the spleen” because it so often accompanies a stitch in the splenic region of females.

The white furred tongue with transverse cracks is very distinctive of an irritable condition of stomach, but it does not always accompany weight.

The pink edges to the gums are also a gastric symptom. They are often found in the dyspepsia of early phthisis; but they are pathognomonic of the dyspepsia, not of the phthisis. As in this instance of Mr. W—, they are often found without any tendency to pulmonary disease.

The deposit of oxalate of lime, instead of urates or uric acid in the renal excretion, is common in such dyspeptic cases as manifest nervous symptoms. I have sometimes found with it spermatozoa, involuntary seminal emissions being also frequent in the same class of cases, if the patients lie on a soft bed or with the head low or on their backs.

The hypochondriasis is apt to take a form engendered by the situation of the discomfort. The patient will fancy he has something strange and abnormal in the stomach.

¹ Case CXLV. in 2d edition.

CASE CXXVIII.¹—At the end of June, 1857, I saw a few times a Mr. B—, a middle-aged man, who complained of weight at the epigastrium and right hypochondrium. He and I quarrelled because I refused to treat him for tapeworm in the stomach, or to believe that he had one inside him anywhere. The tongue was coated with white fur, with cracks across it; the complexion was thick and muddy. The patient was excessively nervous and fearful, and complained especially of a “scratching at the back.”

What is this sensation which people call “scratching at the back”? I find it used in a letter to me from a girl with hysterical paralysis of the legs, and I have certainly heard it from other nervous patients, but cannot recall the circumstance, nor does it convey any definite meaning to my mind.

As a rule, weight and heartburn do not go together. Patients quite understand the difference, and when skilled by unhappy experience in gastric symptoms treat them as excluding one another. Thus—

CASE CXXIX.²—Colonel B—, aged 43, consulted me, July 30th, 1866, about a certain loss of power and pain in the legs. Tracing these symptoms to the stomach, I inquired about the habits of that organ. He said it was a weak vessel. Did he suffer from heartburn then? No, he was “remarkably free from heartburn,” he said, though he knew what it was very well. What he felt was “a weight at the pit of the stomach and in the liver,” better in a bracing climate, worse in a damp relaxing one.

Yet such a thing does happen as the conjunction of weight and heartburn, and when it does the general symptoms are more than commonly severe, even when the catarrh is not bad enough to cause vomiting.

CASE CXXX.³—J. H. R—, a commercial traveller, aged 42, was sent to me by his family doctor, who had watched the case, September 20th, 1858. He had always been a fairly temperate man, and presented a healthy weather-freshened aspect, but with a look of distress or pain in his face. Naturally in the exercise of his calling he had been a good deal exposed to changes of temperature and to wet, and to irregularity of meals. Gradually he began to suffer from indigestion, which grew worse and worse. He had an almost constant weight at the pit of the stomach, especially towards the right side. But he had also decided heartburn and rising of fluid in the mouth of uncertain character, and probably consisting of regurgitated food. This led the way to nervous symptoms, to vertigo and occasional stum-

¹ Case CXLVI. in 2d edition.

² Case CXLVII. in 2d edition.

³ Case CXLVIII. in 2d edition.

bling, and to such confusion of thoughts and difficulty in fixing the attention that he was quite unfitted for business.

He was cupped to a small amount on the back, was blistered, and had gr. xv of bismuth three times a day, and a small aloes and myrrh pill with one-twelfth of a grain of strychnine every night.

His dietary was to be as follows:—

For breakfast.—Stale bread or biscuit, with minimum quantity of fresh butter, milk and soda water in equal quantities to drink.

For dinner.—Lean meat once cooked, stale bread, one spoonful of mashed potatoes mixed with gravy, weak sherry and water to drink.

Tea.—Same as breakfast.

Supper.—A biscuit and a cup of beef-tea.

In ten days the stomach symptoms quite passed away, and the vertigo was much better.

I have quoted here the dietary, as a specimen of what is required in a case of moderate intensity. It was arranged to relieve the stomach without starving it.

Cupping on the back disperses gastric congestion, and is more convenient than on the epigastrium. At the same time, it may aid in adjusting the disturbed balance of circulation in the brain, which is hinted at by vertigo.

To recapitulate—I think the sensation of weight at the epigastrium is one of the most important evidences of a catarrhal state of the mucous membrane of the stomach. It may exist at all times, but the presence of food intensifies it by increasing the amount of mucus present.

Its spontaneous relief by vomiting when intensified by food indicates directly one of the most important parts of the treatment, namely, that the food should be as liquid, light, soft, and as quickly soluble as is consistent with a full amount of nutrition.

As in all catarrhs, alcohol is injurious; but in those who habitually take it, dilute wine and water must be conceded in the chronic treatment.

Local treatment of congestion by abstraction of blood and by blistering seems useful. It may be used when the amount of digestion still carried on and the appetite for food justify its employment. Even a considerable amount of anæmia need not contra-indicate it.

The most efficient pharmacopœial agent is quinine, the conjunction with which also of strychnine seems likely to assist the peristaltic muscles of the viscus in shaking off their adherent coat of mucus.

Where there is an obvious increase of discomfort very soon after food, hydrocyanic acid is useful, not only as a palliative, but curative; for allaying the sensitiveness of nerves contributes powerfully to the dispersing of congestion.

SECTION VI.

Constant Pain.

When pain is constant, it assumes what is called a "wearing" character—that is to say, its moral and æsthetic effect is out of proportion to its intensity; though slight, it consumes away all the joy of life. This character is very marked in the case of constant even pain in the stomach. The patient may be known at once by the pitiable worn look of despair engraven on the countenance, *la figure grippée*, as the French call it, which Velasquez has made immortal in the portraits of his master Philip, the artist's truth being too strong for the courtier's flattery. Considerable emaciation almost always accompanies it. That the reason of this is the destruction of rest by night, is shown by the restoration of rest through opiates checking the emaciation.

There often occur shocks or stabs of sharp agony, darting across the chest or the walls of the belly, and sometimes they flash even into the arms and legs. These have been set down by some as distinctive of cancer. They are not so; I have seen them where simple ulcer was found after death, and I have seen cases of cancer without them.

One characteristic feature rarely absent is its keeping the patients awake at night, not so much from its intensity as from the weakness of the nervous system at that period. The sufferer will even sometimes so far thank a misery for change as to excite pain by pressure, and in the remission of this artificial paroxysm he will drop off to sleep.

Wearing pain is always, according to my experience, increased by pressure with the tips of the fingers. But there is this source of fallacy in some cases, that the increase of pain does not come on till after an interval. This increase after an interval, if not overlooked, is a very determinate sign, and is never, I think, simulated or imaginary. Whereas the fright at being pulled about by a doctor, or idiopathic over-sensitiveness of the abdominal parietes,

or desire to deceive, will not rarely cause signs of pain to be exhibited on a sudden touch.

The situation of the pain on pressure, rather than that of the constant pain, indicates the locality of the tissue lesion in most instances. Lesion of the œsophagus is declared by a soreness behind the ensiform cartilage, lesion of the cardia in the left hypochondrium, of the pylorus in the right. Whereas the wearing pain is more commonly felt between the shoulder-blades than elsewhere.

If any gastric symptom has preceded, the most usual is weight.

Soreness on pressure is so generally in all naturally insensitive parts an indication of structural change, that we all of us as a matter of course apply this diagnostic sign to the organs of digestion. Where it is constant in any one part, independent of the presence of food, and proportioned in its degree to the amount of pressure, it appears to me pathognomonic, and can hardly arise from any other cause.

Whenever, then, tenderness on pressure constantly exists, accompanied by wearing pain, whatever the other symptoms may be, whether heartburn, waterbrash, or weight, I think we are justified in employing local alterative means—leeches, cupping, mustard poultices, blisters, irritating plasters. I have named the remedies in the order in which they appear to me serviceable.

The object of the leeches, or the less convenient cupping-glasses, is by an artificial flow of blood to renew the circulation and consequently the vitality of the degenerated part. This effect is shown by the rapid relief of pain, the "brother of death." Mustard poultices in a much minor degree effect the same object, by drawing blood into the skin. They certainly are so far superior that they do not remove the nutrient fluid.

The action of blisters is peculiar; I cannot doubt its occasional great utility, yet it seems to defy justification by physiology, if we look only to the direct consequences. The explanation I give to myself is the following: the immediate blow to the vitality of the skin is sufficiently remote from the seat of lesion to do no great harm thereto; and at the same time, being artificial and in a healthy tissue, is quickly followed by an effort of regrowth; and that healthy effort is propagated to the neighboring disorganized part. Hence it is that blisters do no good till they begin to heal, but then I feel sure they are often useful. It is, however, to be

remembered that they destroy a good deal of blood by withdrawing the serous component of it, and are therefore weakening.

The use of irritating plasters is much the same as of mustard poultices, but acting slower and steadier they do not induce so much reaction.

Water compresses are not so efficient; I think those who fancy they have found them useful must have fallen in with other forms of gastric pain and mistaken them for tenderness.

An all-important part of the treatment is complete rest. The action of this may be seen by the rapidity with which the patients get well in the hospital.

Tenderness on pressure does not contra-indicate an analeptic restorative treatment being conjoined with the local. Indeed, it demands it. Numerous instances of this may be seen in cases already cited, perhaps the most striking from the symptoms being capable of being depicted in number and weight, is Case LXXXV., of a young Irish woman, who gained twenty-one pounds of flesh in twelve days, in spite of being leeched every other night during nearly all the time for waterbrash, with intermittent pain at the epigastrium and tenderness.

Pain felt only on pressure in a part does not require any palliatives except not to press. This is a platitude perhaps; but still both doctors and patients are the better for having the fact brought to mind, since these out of anxiety find it difficult to keep their fingers away, hoping each minute to find the pain gone, and these are tempted by a love of accuracy, hard to blame, into a needless frequency of examination.

There is a temptation here to discuss points of morbid anatomy; but more important matters summon us to complete their business first. I wish to indicate by the order of march that it is not upon the sort of lesion that the treatment depends, but upon the mode in which the whole patient is affected. It will be best to go through the anatomical lesions in a separate chapter. Here I shall content myself with citing a series of cases of wearing pain, and make short comments on them afterwards. It will be observed that in all I behaved as to treatment and prognosis as if there was structural lesion of some sort, though of the nature of the lesion there was no absolute evidence.

CASE CXXXI.—Mary C—, aged 25, an unmarried maid of all work, was admitted to St. Mary's December 16th, 1853. She was

not in distress; being in a comfortable place, she was unwilling to leave, and indeed she would not come into hospital till she had secured her return to service on discharge. She had, however, a sad, anxious, or pained look in her face, and this she attributed to a constant pain in the left side of the epigastrium, made worse by swallowing, or even by chewing, by pressure, or by the swell of the abdomen two hours after meals. She had lost her appetite, but felt always thirsty. She felt frequent nausea, but not more when the stomach was most painful, nor more at one time of day than another. The left hypochondrium was often tumid and hard, while the rest of the abdomen was flaccid. These symptoms had lasted three months, and during that period the catamenia had been absent.

The patient reported that she had had a somewhat similar illness six years previously, in which she had vomited some blood.

On admission, the tongue was white, the bowels costive, the urine pale, clear, not albuminous, of the specific gravity 1.018 (high for an invalid).

On admission, she was well purged with senna, sulphate of magnesia, &c., but the pain was not relieved, indeed it seems to have grown worse. She had also bismuth, oxide of iron, and opium liniment, without any apparent benefit.

On the 31st of December, eight leeches were applied to the epigastrium, followed by a liniment of hydrocyanic acid. Immediate relief ensued, and in a week she left the ward, being anxious to return to service.

CASE CXXXII.—Mary Ann N—, a housemaid, aged 19, was admitted to St. Mary's July 18th, 1851. Her complexion was pale, her lips bloodless, the tongue moist and clean, the pulse 100, uneven, the bowels costive, the urine pale and copious, the catamenia regular but scanty. There was an anæmic valvular murmur in the heart. There was occasional leucorrhœa, and the lining membrane of the throat was also relaxed and mucous as well as that of the vagina.

She said she had been ill two months with pallor, debility, and shortness of breath, and for about the same period had suffered from pain in the epigastrium towards the left side. This pain was constant and wearing, so that her night's rest was disturbed by it. It was only occasionally increased by taking food.

Under the idea that the pain was dependent on anæmia, hysteria, or deficient catamenia, she was treated with iron, gentian, sulphuric acid, &c., for a month. But she did not get better till she had half a dozen leeches, followed in four days by a blister, applied to the epigastrium. After that the report is continuously "better" and "improving," she was able to take quinine with advantage, and went home well on August 29th.

CASE CXXXIII.¹—Hannah W—, aged 34, a cook, was admitted to St. Mary's April 21st, 1854. She had a worn, unhappy look, and rather sallow complexion. Her body was stated to be a good deal emaciated compared with what it formerly had been. She had enjoyed good health up to about two months previous to her entering

¹ Case CXLIX. in 2d edition.

the hospital, at which period she was taken with a severe attack of vomiting—"a bilious attack." Vomiting had returned occasionally since, but not with the same severity. Her principal distress was a *continued wearing pain* in the epigastrium, which rendered her miserable throughout the day and broke her rest by night. It was increased by pressure, and to a certain degree by meals, unless the food was very soft and in small quantities at a time. She attributed it to the heat of the kitchen she worked in.

Opiates gave temporary relief, and helped her to sleep at night. So that, after a good dose of morphia, the tongue, usually coated with a white fur, was noticed to become clean.

Six leeches were applied to the epigastrium, six grains of bismuth given three times a day, and the diet restricted for a week to broth without meat in it, and to cold milk and water.

It appeared that previous to admission the patient had been freely treated by means of purgatives, her bowels being very costive. They were entirely left off, and in consequence the bowels opened themselves only once in five days. This rest seemed of great use.

On the 27th she found herself able to eat a bit of beef given her, and the next day some bread, so she was allowed to have it.

On May 2d she had lost her epigastric pain, and on the 6th was able to return home. On the 20th she came to show herself to me, and to report that as yet she had no return of the pain.

CASE CXXXIV.¹—Hannah P—, aged 48, was admitted to St. Mary's August 17th, 1855. She was the wife of a laboring man, unable to work by reason of paralysis, and she had for some time supported him by going out to field labor; so that she lived very hard, and, moreover, had lost thirteen teeth, so that even the rough food she did get was improperly chewed. Up to the previous February, however, she had been in strong health. Then she began to suffer pain in the epigastrium at odd times; but it did not prevent her earning her wages till the summer, when it became constant, and she was entirely invalided, partly from the pain and partly from giddiness and a feeling of prostration.

On admission her countenance was worn and sallow, her appetite was good, the pulse small and weak, the tongue cleaner and redder than natural, the bowels costive. The pain at the epigastrium was *constant, and increased by pressure*. She complained of want of sleep.

At first she was treated with hydrocyanic acid, but no benefit at all resulted. Then a blister to the epigastrium, on which great relief immediately began. Then she had a grain of opium every night and the following draught:—

R.—Misturæ ferri co. flʒj,
Acidi gallici gr. iv, ter die.

She was able to take a pint and a half of milk with lime-water in the day, and egg and other diet as well. But she did not lose her pain in the stomach till I cut her down to the milk and lime-water only, and gave her a drachm of bismuth three times a day. The

¹ Case CL. in 2d edition.

latter prescription and the keeping of the blistered surface open for a month was at last successful, so that on September 19th she was able to begin eating half a mutton-chop daily, and on the 28th was discharged.

CASE CXXXV.¹—Mary Ann S—, aged 32, admitted to St. Mary's January 23d, 1855, attributed her illness to debility induced by her last confinement. She became subject to pains in the epigastrium, which came on about once a fortnight and *continued without intermission* during the period of the attack. One of these attacks had commenced on the 18th, when the pain was general across the pit of the stomach. On the 19th it passed over to the right side, where it became fixed and constant. She attributed this attack to a meal at which she ate both rice and potatoes. It had much diminished on her admission to the ward.

On examination of the abdomen there was found a circumscribed spot to the outside of the right rectus abdominis muscle, and within two inches of the costal cartilages, which was excessively tender on pressure. This spot appeared also somewhat tumid and tense; the patient said it had been more tumid two days before, and had been reduced by the application of a sinapism. There was resonance on percussion between this spot and the liver, the extent of whose dulness was quite normal.

Six leeches were put on the epigastrium, followed by the continuous application of a bran poultice. She had gr. xv of bismuth three times a day, and a diet of milk and lime-water, with a pint of beef-tea daily. She entirely lost her pain, but eating a bit of meat at supper on the 31st brought back a short relapse, which was immediately checked by the fresh application of half a dozen leeches. She was made an out-patient on February 2d.

CASE CXXXVI.²—Harriet B—, aged 40, was admitted to St. Mary's March 11, 1864. She had suffered seven years from frequent attacks of *continuous pain* in the epigastrium, sometimes accompanied by vomiting; and sometimes the vomiting had contained blood, though it did not do so when in the hospital. She had found by experience that hot food was apt to bring on these attacks, and that the danger was closely proportioned to the degree of temperature. She had consequently acquired the habit of taking everything cold and iced if she could get it. (The notes of this case are imperfect.)

CASE CXXXVII.³—William G—, aged 33, country gentleman, February 1st, 1866. He has suffered for eight months from *almost constant pains* in the right side of the epigastrium, which is increased by pressure and by external cold. His countenance has got sallow, and he has lost more than fourteen pounds in weight. He has no cough, and the chest seems healthy. On manual examination of the painful spot it is resonant on percussion. The bowels are costive. They were regular before he took a quantity of mercury and purga-

¹ Case CLI. in 2d edition.

² Case CLII. in 2d edition.

³ Case CLIII. in 2d edition.

tives. The pain was increased by riding but not by food. His rest was broken by it. He did not vomit.

I put him on two grains of quinine dissolved in lemon-juice, with three minims of hydrocyanic acid twice a day and sent him to Bath till March 5th.

By that time the constancy of the pain was much abated, and he was enabled to ride without increasing it. He had gained two pounds in weight.

He continued to improve till the middle of May, when he returned to his home in Lincolnshire, a low aguish district, and almost immediately relapsed and returned to me in London. He said he had found several times before that a visit to Lincolnshire made him worse, but he thought the summer weather would make it safe. "To keep him out of harm's way" I have recommended him to travel for a year or two, as it is to be feared these relapses may constantly occur on exposure.

CASE CXXXVIII.¹—James N—, an upright military-looking country gentleman of 50, was always hearty and strong till he had the small-pox in 1864, after which he became costive in the bowels, and got into the habit of taking so much purgative medicine that without it no action could be secured. In the summer of 1866 he began to suffer from discomfort at the epigastrium, which grew gradually more frequent, so that when I saw him in October it was always produced by food, and often also arose at other times, especially when in bed. I gave him a tonic of quinine and strychnine with some pills of aloes and myrrh with strychnine. This at first seemed to afford a little temporary relief, and the patient was anxious to make the best of matters. But he seemed to get weaker and thinner, and then the pain became *constant*, and was observed to be increased by riding on horseback or in a rough carriage. And I thought after a fair trial that the bitter drugs made the pain worse, so I left them off and ordered only some cod-liver oil. Also one spot in the centre of the epigastrium I found tender on pressure, and at the same point I could feel the pulsation of the aorta with abnormal clearness, not stronger perhaps than natural, but more readily felt by the finger. On these grounds I held it my duty to give a bad prognosis.

After this I heard no more of the case for nearly three months, when Mr. Faithorne, under whose care he then was, wrote to me to say that Mr. N— had persevered in taking medicines for some time, when he found himself no better and left off. He was growing gradually weaker, and derived relief to his epigastric pains only from morphia. There was no tumor in the epigastrium.

CASE CXXXIX.¹—Miss B—, a thin, active person of slight muscular development, who looks about five and thirty, has been in the habit of walking to church every morning at eight o'clock without taking any food; then swallowing her breakfast and passing the greater part of the day in "parishing," laden with a great pocket full of books, rice, tea, sugar, loaves, &c., fastened round her waist. For some months she has experienced a pain in the pit of the stomach

¹ Case CLIV. in 2d edition.

² Case CLV. in 2d edition.

ten minutes or a quarter of an hour after she begins to eat, and lately this *has become constant*. She has also occasionally vomited after meals, and has noticed mucus and blood in what has been thrown up. This symptom has no connection with the monthly period. Lately she has been disposed to be hysterical, but being of a strong-minded, cheerful temperament of mind, has not given way to it. Catamenia and alvine excretions natural. Feet apt to be cold.

On examination of the bare abdomen, there is pain developed not by gently touching, but by firmly pressing with the finger-tips, the middle of the epigastrium just below the ensiform cartilage.

Dec. 15th, 1866.—To leave off entirely tea and all viands containing sugar. To lie in bed till half-past eight, and never go out till she has had a good meal. To leave off stays, and the weights suspended round the waist, and when she is strong enough to carry burdens, to carry them in a basket. To take a quinia draught twice a day, and to be provided with a bottle of ammoniated tincture of valerian, of which she is to take two teaspoonfuls in water whenever she feels inclined to have a cry.

January 27th, 1867.—A strict conformity to rules has been rewarded with considerable improvement, and she has had no occasion to take the valerian. Still, there is pain on pressure of the epigastrium.

To wear a piece of emplastrum resinæ six inches square on the epigastrium, and to take four grains of citrate of quinia and iron instead of the other medicine.

Feb. 28th.—A return to her old home and its associations, has caused a relapse into her former state. She appears also nervously excited, to judge by her letter received to-day.

R.—Tincturæ valerianæ amm. ð5ij ter die.

Advised to travel, if she has a chance, in the South of France and Italy for the spring, but to avoid Rome, Pisa, and the like.

April 24th.—Has remained at home, resuming the quinia and iron. Has gained much flesh, but not entirely lost her pain.

October 14th.—A letter received to-day reports that Miss B— is so well as to have left off all medical treatment.

CASE CXL.¹—A lady's maid, Sarah S—, aged 33, was admitted to St. Mary's September 10th, 1852, for *constant wearing pain* at the epigastrium, made sharp by pressure or by eating; vomiting and emaciation. She had also suffered from waterbrash of clear fluid, and acidity. She said that in every spring for the three years previous she had an attack of bloody vomiting. She attributed it to her having worn a long busk to her stays, which consequently she had left off.

CASE CXLI.¹—James M—, aged 22, a potman, was attacked at the beginning of April, 1860, with *pain of a continuous character* in the pit of the stomach. This continued getting worse till the 16th, when in the act of vomiting, to which he had become subject, he brought up about half a pint of blood black in color. In the afternoon of the next day he brought up as much as three pints of thick black blood in masses so tough as nearly to choke him. The tongue, how-

¹ Case CLVI. in 2d edition.

² Case CLVII. in 2d edition.

ever, remained clean and moist, and the pulse was only 74; the heart and lungs were healthy, and he had lost the pain in the epigastrium even when it was pressed. All which things considered, it was not thought right to detain him above four days in hospital, especially as he wanted no medicine.

Towards the end of the year this man was again in hospital for pneumonia, and we were able to ascertain that he had experienced no return of hæmatemesis.

CASE CXLII.¹—Sarah G—, aged 33, housemaid, always enjoyed good health to the middle of June, 1857, when she was laid up with sore-throat at first. This passed into a *wearing pain* at the epigastrium aggravated by food, and accompanied by several attacks of vomiting, during which she threw up blood. She became an out-patient at St. Mary's, under Dr. Markham's care; and he, finding her weakness and paleness increase with alarming rapidity, and seeing the tongue dry and furred as in hemorrhagic fever, recommended her being admitted on August 22d. We then found, as Dr. Markham had suspected, but the patient constantly denied, that she passed blood by the bowels whenever they were opened. This had to be effected by artificial means, for she was very costive. On one occasion the feces contained a clot of fibrin, washed colorless, as big as an egg. After observing and examining her for a few days, I gave her

R.—Plumbi acetatis gr. ij,
Opium gr. $\frac{1}{4}$. In pilula ter die.

She took this for three days, and then her bowels were open of their own accord, and she passed a dark feculent solid stool containing no blood. The pills were therefore left off, and she was treated with occasional doses of castor oil to clear the bowels of the remedy.

But, for some forgotten reason or other (perhaps a relapse of the hemorrhage) I began the acetate of lead again on September 16th, giving it her only at night, however. On the 21st she passed a quantity of flocculent fibrin without blood. On the 23d, a blue border was observed along the gums, so the lead was again left off, and she does not seem to have lost any more blood during her residence in the hospital, viz., till October 16th.

CASE CXLIII.²—Eliza F—, aged 35, was admitted August 21st, 1860, having, for a fortnight, suffered from vomiting of her food, tasting and smelling sour. That morning she had begun to consider her case serious, from having thrown up in addition some clotted blood to the extent of a few ounces. There was pain in the epigastrium, *running through to the back, and increased by very slight pressure.*

She was ordered a blue pill and castor oil, and then twenty minims each of sulphuric acid and oil of turpentine in a mixture, three times a day; also ice, milk, and cold beef-tea, like all other patients with hæmatemesis: but the next day the treatment was discontinued, as the vomiting had ceased.

There was no more blood thrown up till the 23d; the medicines

¹ Case CLVIII. in 2d edition.

² Case CLIX. in 2d edition.

were resumed, and it ceased. But all along she was passing black stools, apparently consisting of digested blood.

Then her bowels became costive, and she took only some decoction of cinchona, and was discharged on September 7th.

CASE CXLIV.—Bridget F—, aged 40, a chairwoman, was admitted to St. Mary's May 25th, 1860. It appeared that two years previously she had been in the same ward, under Dr. Alderson, for pain of the abdomen, of which she recovered under the use of leeches and tonics. She remained free from pain and quite well for a year; after which it returned, but slight and at intervals of several days. Since the beginning of March, it had become continuous. Being a single woman, with a child of 16 dependent on her, her illness had reduced her to great straits, and she had lived on tea and bread. She had for three weeks felt much giddiness in walking, and could not sleep at night. The tongue was clean, the urine clear and scanty.

She was ordered at first six and then four leeches to the epigastrium, and to be dieted on three pints of milk daily, with one pint of lime-water. On the 30th the pain was relieved, and she was ordered to take quinine twice a day. On June 8th she was discharged cured.

In Case CXXXI. there was probably ulceration near the pylorus, which had become so chronic as not to bleed. Hæmatemesis would have relieved her as on the former occasion, but the leeches effected the object in a quicker and less alarming way.

Case CXXXII. is one of that puzzling sort where the long existence of the gastric lesion has produced a sufficient amount of anæmia, and, perhaps, hysteria, as in themselves to account for the symptoms. All practical men will be ready to pardon the error committed in the earlier prescriptions. In all cases treatment has to be somewhat tentative.

In Case CXXXIII. it may be remarked that the disease is attributed to the high temperature to which her occupation exposed the patient. I question whether this accusation was a just one; but probably the heat caused pain to the injured part, and was on this ground set down as the origin of the injury. For it may be generally observed that hot food, as in Case CXXXVI., gives rise to distress in tissue lesions of the stomach.

Case CXXXIV. is an instance of what must strike every practitioner in a mixed population, that too low living and the low vitality which is its consequence is a more frequent agent in the production of disorganizing lesions than too full living. Almost all patients in whom we can diagnose chronic gastritis are poor people.

Remark in these two cases the use of opium. It produced no

constipation, or it would have been left off; indeed, in the first it seemed to take the place of purgatives, with which the patient had been previously treated. This tolerance of opium, without arrest of the excretory functions of the ilia, I have found to be the rule wherever the drug is really requisite. When it confines the bowels, its administration is almost always superfluous and meddling practice.

In these two last cases I suspected chronic gastritis without ulceration.

In Case CXXXV. the tumefaction of the localized spot led me to suspect old adhesions of the peritoneum giving rise to the immediate symptoms of congestion. The relapse on the attempt to eat solid food is interesting, as is also the rapid relief by leeches.

In Case CXXXVI. local depletion would probably have been desirable. The slowness of relief without it presents a contrast to the other cases. But I was loath to employ it on account of the malarious taint with which the patient's constitution was blighted. Aguish people bear loss of blood very ill.

In both CXXXVII. and CXXXVIII. it is to be remarked that the motion of riding was especially noxious, though both were sporting men and more at home a-horseback than on their own legs. This pain from motion is a clear sign of structural lesion. The localized pulsation of the aorta is another pathognomonic phenomenon. The gradual increase of the symptoms is an interesting feature in the case.

Case CXXXIX. though not poor, yet still took less food than is required by a spare body exercised as hers was. The weight of the bulky pocket pressing on the waist was assigned by her friends as the immediate external cause of her ailment, and I cannot but think they were right.

The renewal of life induced by a trip to a Mediterranean climate, as recommended to Miss B—, for the spring, is very striking to those who have tried it, especially in cases of chronic tissue-change. I made the excuse in Case CXXXVII. that it was to keep the patient out of harm's way, and so it was partly, but I believe it does more than that, and has really a regenerative power over the degenerated substance of the body. Statistical and self-experimental reasons are given for this in a little monograph "On the Climate of Italy," founded on my own case.

Rome, however, and Pisa, and perhaps a few other places of less

note and less tempting, must be shunned by all persons of an hysterical temperament. This caution, though in a less degree, applies equally to young men as to young women, as I am informed by an intelligent clerical student at the Collegio Pio, who has of his own accord made this remark to me, as to the effect of the climate on young Englishmen who go there to study for holy orders.

Cases CXXXIX. and CXL. may both recall the frequency with which somewhat similar pains and effects are attributed to the trade of shoemaker and to tight lacing. Constant pressure upon the outside of the stomach seems to have a disorganizing power like that of the pressure of a foreign body, tumor or the like, inside. The stomach is worn away just as the ribs are, by the gentle but continuous pressure of an aortic aneurism.

In CXXXIX., CXL., CXLI., CXLII., CXLIII., the diagnosis of ulceration was rendered probable by the hemorrhage being joined to the continuity of wearing pain.

In CXLIII. the running of the pain through the back is noticed.

The receipt of relief to continuous pain by the application of leeches is not contra-indicative of the simultaneous employment of quinine. They are shown by Case CXLIV. mutually to assist one another.

SECTION VII.

Pain in the Stomach from other Causes than the Indigestions.

CASE CXLV.¹—Mrs. S—, aged 40, used to visit my house frequently in 1849, with a daughter, whom I was attending for cutaneous disease. One day, though at the time in perfect health, she desired my advice about a curious pain in the pit of the stomach, which from time to time assailed her. It came on gradually, was not severe enough to lay her up, but constant and worrying while it lasted, namely, for about a week or ten days at the most. The first thing I made out about it was that it usually succeeded to any mental worry or unusual bodily exertion for several days. On further inquiry I found it invariably coincident with the catamenial periods, which, however, were regular, not excessive, and accompanied by even less pain in the loins, uterus, or groins, than most women accuse. It appeared in fact to be a dysmenorrhœic pain, misplaced at the wrong end of the abdomen.

I gave her a course of quinine and iron for the nonce, and desired her to take a special dose of hydrocyanic acid and opium if the pain came on again. This seems to have been successful, for though she

¹ Case CLX. in 2d edition.

brought her daughter several times during the next year, she said no more about herself.

Though the patient appeared in perfect health, the mere fact of having an anomalous pain showed a weakness greater than the normal lot of the female sex, which made me use the expression "*dys-menorrhœic*."

The last is a specimen of the most usual degree in which pains properly uterine are felt in the stomach, but sometimes they are of a more serious character.

CASE CXLVI.¹—Jane R—, aged 25, a housemaid, was admitted under me at the hospital February 16th, 1852. She was a personable robust country-woman, who had lately come up to service in London. Her tongue was clean, her pulse 84, full and strong, her skin normal, her urinary and fecal excretions reported natural. Her mistress said that for three days Jane had complained of pain in the lower part of the chest in front. That it was increased by food, and consequently she had "eaten nothing," that is to say, had taken only liquid food. She got an out-patient's letter to the hospital, but on her way to use it was taken so much worse that she was obliged to be admitted.

She sat up in bed rubbing her epigastrium with her hand, and expressing herself as in great pain. Rubbing, however, gave her no relief, nor did pressure; but it could be borne without any increase of pain.

The catamenia had been absent two months. A large linseed poultice was applied to the abdomen, she took a four-grain calomel powder immediately, and a senna draught three hours afterwards. The same day the catamenia occurred, not copious (they were never so, she said), but sufficient; the pain instantly ceased, and she was well enough to be discharged on the 18th.

The disgorgement of the portal veins by a mercurial and a purgative is a capital way of bringing on the catamenia in a robust, full-blooded person. Remember, however, that I do not recommend it in those more common cases where the amenorrhœa is merely an evidence of the absence of blood to be discharged, a symptom of anæmia.

Pain in the epigastrium from an hysterical hyperæsthesia not uncommonly exists without any other manifestation of hysteria being present, but it can equally be cured by valerian, and does not seem affected by local measures.

¹ Case CLXI. in 2d edition.

CASE CXLVII.—Ann C—, æt. 28, a married woman, but in service, was admitted to St. Mary's February 7th, 1861. She had been ailing a month with continuously increasing pain at the epigastrium after food, for which she had been taking mercurial pills from a chemist's shop. The consequence was the fixing of the pain in the side.

The appetite was bad, and she was thirsty; but the catamenia had not been arrested.

A few leeches were put on her side, but they did not seem to have any effect. Under the use of valerian and hydrocyanic acid she was able to go out well on the 13th.

"Deficient action of the bowels" is frequently assigned by the public as a cause of pain, especially when it occurs in other people. Their fondness for purgatives doubtless often leads to error on this head, but still I do think they are sometimes right, and that the mere retention in the colon and rectum of matters ready for evacuation may give rise to considerable discomfort in the epigastrium. It is not very easy to hit upon a good illustration of this, for most usually costiveness and even constipation depend on some morbid condition of the stomach or of the whole alimentary canal, or of the whole body, and it is difficult to separate the effects of the retention from those of the condition which has engendered it. Thus, for example, you will find that nearly all the chronic cases quoted in the second chapter had confined bowels, but no one would attribute the epigastric pains to that cause, seeing that an obvious indigestion existed in the stomach, the seat of those pains. In the following cases, however, the cause of the retention of the feces was quite extraneous, and there was no proof of anything being the matter with the digestive organs.

CASE CXLVIII.¹—Anne M—, aged 23, a domestic servant, was admitted to St. Mary's October 15th, 1856, complaining in various parts of the body of obscure pains, which, however, after admission, seemed to have their definite seat in the epigastrium, and to be worst always after food. She had palpitation of the heart, nausea, and a tendency to faint. Her face was flushed, the skin hot, and the tongue coated; but otherwise her aspect was healthy. After a few days the nurse observed that her linen was stained, and the patient herself stated that she had a vaginal discharge. But actual examination found the organs of generation quite normal, and that the pus came from a small papilla, the remains of an old hæmorrhoid, on the edge of the anus. This was exquisitely sensitive, and the patient confessed that she had voluntarily retained her feces on account of the pain which defecation gave her. Warm baths and softening enemata,

¹ Case CLXIII. in 2d edition.

with the aid of valerian draughts, reduced the hyperæsthesia, and with the emptying of copious solid stools from the colon the pain at the epigastrium ceased, and she got good rest at night.

In cases of misfelt pains, I mean pains not in the locality of the parts truly affected, valerian is a very useful medicine. Its calmative effect on the nervous system is remarkable. That was the reason of its administration to this young woman. It would have been cruel to forcibly open her bowels by purgatives, without first deadening the abnormal sensitiveness which had caused her to constipate them.

CASE CXLIX.—*Maric F—*, aged 40, a sallow Provençale with dark hair and eyes, was admitted to St. Mary's March 3d, 1860, complaining that she had suffered for three months with pain in the epigastrium, especially towards the right side, gradually passing off towards the right ileum.

On admission she stated (and, indeed, it was confirmed by her manner) that inspiration and speaking much increased the above-mentioned pain. This led to a careful examination of the heart and lungs, but nothing abnormal was there found. She stated that food did not increase the pain, though she ate little from loss of appetite.

The tongue was clean; the pulse 72, weak. The urine was slightly alkaline.

The abdomen was hard, and drummy on percussion. The gas seemed to be principally contained in the ilia. The bowels were very costive, the motions hard and lumpy.

Four grains of *pil. hydrargyri* were prescribed, to be followed in four hours by *℞jss misturæ sennæ*, the latter to be repeated again on the morrow. This treatment was successful, bringing away a vast quantity of feces. On the 9th she was discharged "cured."

CHAPTER V.

VOMITING.

SECTION 1.—General remarks on the physiology of the act. SECTION 2.—Vomiting of pus. SECTION 3.—Vomiting of mucus. SECTION 4.—Vomiting of blood. SECTION 5.—Acid fermentation of vomit. SECTION 6.—Fecal vomiting. SECTION 7.—Vomiting of food.

SECTION I.

General Remarks on the Physiology of the Act.

IN the normal passage downwards of food the involuntary nerves and muscles of the fauces, the gullet, and of the stomach are in vigorous action; whilst the voluntary abdominal muscles and the diaphragm exert no influence over the digestive canal.

In vomiting a converse condition exists—the involuntary œsophagus is wholly or partially paralyzed and relaxed, the involuntary peristaltic wave of the stomach ceases, and at the same time the diaphragm and abdominal muscles are degraded from agents of volition to purely automatic instruments.

The ceasing of the peristaltic wave allows the pylorus to close. It is converted from a portal somewhat stiffly held open by the circular fibres (as if in a sort of erection) into a collapsed valve. The pylorus being closed and the cardia open, it would not require any such very strong muscular effort to empty the stomach.

But the muscles thus abnormally perverted into compressing the stomach are very large and powerful. Hence vomiting is a violent and explosive act.

In spite, however, of the violence and explosiveness, a correct pathology must look upon vomiting as a lowering of the vital powers, as an atony of the digestive tube and its appendages, when the facts are put in the order and light above sketched out.

Thus it becomes clear why vomiting is an accompaniment of so many states in which there is a diminution, or arrest, or paralysis of muscular action. Unusual or too long continued bodily exertion, exposure to cold or heat, and such like circumstances pecu-

liarily exhaustive of muscular and nervous power, before eating even a moderate meal, will in some persons cause it to be ejected.

The same result follows in fainting, or when the nerves of the gullet experience a temporary paralysis from purely mental causes; so that vomiting is produced by disappointment, anxiety, nay, sometimes even by sudden joy and pleasure. Still more strikingly is it brought on by structural disease of the stomach, by which the peristaltic wave is arrested, or at least interfered with. Or by a stoppage of the same in the intestines, such as occurs in ileus, peritonitis, &c.

Vomiting in these latter cases has been sometimes referred to a reversal of that muscular act which carries the alimentary mass onwards—to an *anti-staltic* motion. But there seems to me no evidence that such is the case; indeed, an attentive consideration of the phenomena of the act itself would seem to show proof to the contrary. Observe, in a recently felled bullock, peristaltic motion—it is slow, continuous, and uniform; possessing indeed strength in its persuasive steadiness, but no irresistible impetus. In vomiting we see a violent explosive power, like a force-pump, throwing the ejected matters out to a considerable distance. Can there be a greater contrast between two acts of the same part? The explanation given above seems much more naturally to suit the phenomena.

In some cases the atony is general, as in vomiting from cerebral diseases of a paralytic character. In others it appears to be more local, as for example in the action of emetics, where the force of the agent falls mainly on the stomach, and secondarily on the limbs; and possibly in some it may be entirely local—an approach to which is made in the quickly acting emetics, such as sulphate of zinc, which therefore produces much less depression than most other medicines of the same character. But in all there is sufficient reason to consider the muscular state in vomiting to be one of relaxation or atony, and to view as the main muscular manifestation of atony in the stomach a tendency to vomit.

Vomiting seems less dependent upon the previous or chronic condition of the stomach, and more upon the idiosyncrasy of the individual, than any of the phenomena already discussed. There are dyspeptics who, whatever may be the matter with them, never throw up their food; whilst others do so on the slightest occasion. Even pleasant associations will, in some people, bring on this most

unpleasant consequence; an occasional patient of mine, a healthy young lady, has been sometimes taken with retching on entering a ball-room where she expects an agreeable evening, whilst it never happens in going to a stupid party. On the other hand, I have had a patient with cancer of the stomach, and others with various sorts of severe dyspepsia, who could take the most repulsive drugs without inconvenience. The mere fact of vomiting, therefore, affords in itself no clue to the local condition of the stomach. But the time of its occurrence, the circumstances which increase it, and the nature of the matters thrown up, may be most suggestive to the practitioner.

Vomiting when the stomach is empty, or that which, though it accidentally occurs at other times, is most frequent and distressing then, may be safely set down as arising not from any fault of the viscus itself. Such is the morning sickness frequent in pregnant women, in cases of diseased heart, of abdominal tumor, and sometimes of pulmonary consumption. This has been explained as a reflex action of the vagus nerve excited by the irregular irritation of some of its branches; and on the same principle may be interpreted the more rare cases where it has been caused by foreign bodies in the ear or nose, by tumors in the neck, &c.

When it occurs with a full stomach, we may reckon, as a general rule, that the smaller the quantity of food that produces it, and the sooner it takes place after eating, the nearer to the mouth is the cause. An ulcer of the œsophagus causes rejection of the food before it has got down; of the cardia, or smaller curvature, very soon after it has got down; and a similar lesion of the pylorus or liver, after an interval sometimes of several hours.

When vomiting arises from the paralysis of the œsophagus which is induced by a congestion of the brain, as in apoplexy or drowning, or by poisoned nerve, as in dead drunkenness, it is increased by the horizontal posture; when it arises from deficient supply of blood, as in fainting and anæmia, that same position relieves it. Sea-sickness also is warded off by lying down with the head low.

The contents of vomit may often afford valuable indications to the practitioner, and will appropriately divide into classes the cases he meets with. They will here serve the purpose of the headings of sections.

SECTION II

Vomiting of Pus.

CASE CL.¹—Elizabeth S—, aged 25, was admitted at St. Mary's January 23d, 1852. She had suffered for three months from vomiting, at first occasional, but latterly at every meal, so that, in spite of a good appetite and plenty to eat, she had grown pale and thin. After this had continued a month, she began to experience a difficulty in swallowing, which has gradually increased, though the pain caused by it is not so great. The mouthful seemed to lodge somewhere at the back of the manubrium of the sternum, and either to be rejected or retained with great pain, which ran through to a spot between the shoulders. Besides this, she used to have occasional retching and occasional vomiting of glairy and frothy matter, with opaque streaks of pus in it not unlike the sputa of early phthisis.

Gruel, arrowroot, cocoa, raw eggs, and milk, were swallowed and kept down, so that she was occasionally not sick for a day or two together. Dry bismuth powders she also kept down, and thought they relieved the pain. But sulphate of copper made her vomit on each occasion that it was tried, as was done several times with the idea of stimulating the ulcerated surface to healing action.

At length she seemed to catch a cold on the chest, and died suddenly after breakfast one morning.

On examination after death, its immediate cause was found to be the opening of a fistulous communication between the ulcerated surface of the œsophagus and the pericardium, by which pus and food had made their way into the serous sac.

The stomach, &c., were healthy.

The pus in the vomit here doubtless came from the cellular tissue around the œsophagus, which was being eaten through by the fistula.

Remark in passing the use of which bismuth seemed to be to the raw surface. Some persons have found it of equal use in phthisical diarrhoea from ulcerated bowels. I confess I find it in this latter disease less efficient than sulphate of copper; but in the upper part of the digestive canal the comparative force of the two drugs would seem to be reversed. Another instance of the use of bismuth in ulcerated œsophagus will be quoted afterwards (Case CCL.). I felt considerable satisfaction that this poor woman never had any probang put down her throat. It would have thrown no light on the diagnosis, and might have gone into the pericardium and been the cause of death. *Imprimis non nocere* is the first commandment in medical morals.

¹ Case CLXIV. in 2d edition.

CASE CLI.¹—James G—, aged 32, dairyman, admitted to St. Mary's, June 27th, 1856, after an illness of a month, during which he had attended as an out-patient. He complained of soreness of throat and difficulty of swallowing solids. He said he never vomited, but after admission he began to throw up a considerable quantity of pinkish or flesh-colored purulent matter. Sometimes it was ejected by retching, sometimes with less effort. There was nothing abnormal to be seen or felt in the fauces or upper part of the œsophagus. After he had been in for a fortnight a small tumor of cartilaginous density was felt behind the ramus of the jaw, just below the right ear. During the time he remained in hospital he had a laurel-leaf poultice to the neck and cod-liver oil; but as no conscientious hope of future amendment could be expressed, it was not thought right to occupy the much-wanted space in the ward with an incurable case, and so I lost sight of him.

There could be but one end to what was indubitably a cancerous ulceration of the œsophagus, and I do not think a hospital ward is the happiest place in which to await that end; so neither for the patient nor the public do I think it right to retain such cases in a charitable institution. It is quite different where any doubt exists about the diagnosis.

CASE CLII.²—Edward J—, aged 56, green-grocer, was admitted into St. Mary's November 16th 1857, complaining of pain in the left side of epigastrium immediately after eating. This was relieved by vomiting. His illness had first come on during a voyage to America the previous April. Previous to that he had always enjoyed good health, and weighed 12 stone; but now he was reduced to 9 st. 2 lb. His vomit usually consisted of his food; but on one occasion he ejected a quantity of creamy pus mixed with a strongly acid fluid.

A hard tumor was discovered below the cartilages of the ribs on the left side.

He left the hospital December 14th, probably dissatisfied at the little relief it was possible to give him.

These are the only cases I can find where there was pus in the vomit, viz., common ulceration of the œsophagus, cancer of the œsophagus, cancer of the cardia. It does not appear to be thrown up in common ulceration of the stomach, still less in catarrh of the stomach. The gastric and œsophageal mucous walls are very different from the bladder or urethra. These secrete pus on the slightest irritation; an undue stretching, a hard substance, however smooth, an essential oil, moderate alkalinity of the urine, the infection of a catarrh so weakly poisonous as gonorrhœa, and other

¹ Case CLXV. in 2d edition.

² Case CLXVI. in 2d edition.

equally mild forces, arrest their vitality down to the pyogenic stage. The fauces, gullet, and stomach are much tougher; fortunately, indeed, for if stretching, hard substances, spicy oils, alkalies, or acids hurt them, or if moderate doses of morbid or common poisons acted on them locally, who would insure a man's life for a week? To purulent inflammation they are not prone, and, therefore, we cannot expect to find pus in that which is ejected from them in their usual diseases. When there is pus in vomit, either a malignant tumor has destroyed the walls and taken their place, or there is an ulceration with adhesions into the surrounding cellular issue.

Care should be taken to ascertain the condition of the lungs, and make sure that the pus does not come from a vomica, the emptying of which will sometimes be accompanied by vomiting.

SECTION III.

Vomiting of Mucus.

Mucus is found in the vomit in what is called English cholera, or acute summer gastric disorder.

CASE CLIII.¹—Edmund K—, aged 18, was found by a policeman, at half-past six in the morning of September 24th, 1851, staggering against some palings, and unable to walk, from a violent pain in the belly, which had suddenly attacked him on the way to work. He was taken to St. Mary's, and kept vomiting mucus and bile all day. The pulse was 90, the tongue dry. Pain on pressure of the epigastrium.

No collapse, cramps, or retention of urine occurred. He had a dose of calomel immediately, followed by diarrhœa; a dose of opium at night; and was discharged well next day.

The green matter in the vomit of these acute attacks is shown to be bile by its bitter taste to the patient, and sometimes by its smell to the bystanders. The presence of bile is a proof of previous health, and an assurance that the cause which is disturbing it is a temporary one, however severe it may be, and that the vitality is not deeply smitten. You do not see it in the vomiting of chronic disease, you do not see it in that of fatal epidemic cholera; but you do see it thrown up by the hearty landsman who is roaring over the gunwale of a Channel steamer, and it is hailed as a good sign in a convalescent from cholera collapse. Give an emetic to a

¹ Case CLXVII. in 2d edition.

healthy man, and you see plenty of bile; give it to a broken invalid, and you most likely will not. Bile, then, is to be looked upon as a bird of good omen. It is regurgitated from the liver into a fairly healthy stomach, and not into an unhealthy one.

Mucus, mixed also with bile, is thrown up in those less severe exhibitions of gastric disorder which are called "bilious attacks."

CASE CLIV.¹—John D—, a retired schoolmaster, aged 55, became my patient, February 7th, 1863. For at least ten years he had been subject to "bilious attacks," occurring in the winter, and generally half-a-dozen times each season. He described them as commencing with a hawking up of phlegm; which phlegm did not seem to come from the air-passages, but from the gullet. This usually took place of a morning; and in the evening a severe attack of headache came on, and a vomiting of phlegm and bile. He came to me because he found them getting more frequent and severe, and because he began to doubt if the traditional mode of treating them with purgatives were really the best. I put him on quinine and strychnine, and saw him again on the 23d. He said that in the meanwhile he had been threatened with a bilious attack, but it had been warded off, he thought, by the medicine. I heard of him in 1866 from a relative as a much heartier man than he used to be.

The summer gastric disorders, which I first exemplified, are probably brought on by the absorption into the body of some poison diffused through the air or water, and which, when wide-spread and intense, constitutes the terrible epidemic cholera. They fall on the robust equally often with the weakly. These winter bilious attacks are more like what we called "catching cold," and are certainly induced by changes of temperature in damp climates. Like colds in the head or chest, they affect delicate-formed and delicate constitutioned persons principally. Much may be done, therefore, to ward off the attacks by strengthening the constitution. Quinine and strychnine is the best treatment; purgatives do harm. I say purgatives do harm, because an unprofessional friend of mine, who used formerly to be treated *secundum artem antiquam*, finds even homœopathic treatment better than purgatives; and restorative treatment would be still better than homœopathic, would she but try it.

Another thing which seems to me a broad hint against purgatives for "bilious attacks" (by which I mean attacks of gastric

¹ Case CLXVIII. in 2d edition.

catarrh in a body healthy enough to eject bile by vomiting) is, that where there is purging arising without the aid of drugs, the sickness lasts much longer than if there is none. He must be indeed a devoted admirer of the pharmacopœia who imagines that the artificial diarrhœas excited by its help can do good where nature's diarrhœas do harm. Compare the more usual forms of bilious attack, of which I have quoted examples, with the following :—

CASE CLV.¹—Elizabeth J—, a domestic servant, aged 32, came into St. Mary's, October 11th, 1855. Since the first week of the month she had complained of headache and weight at the epigastrium, and on the 10th was seized with diarrhœa, which still continued, though less severe than at first. On the 17th, she was, in addition, attacked with pain in the epigastrium and vomiting, which was very frequent on admission. The pain was much relieved by mustard cataplasms. The tongue was red and clean, the pulse weak and quick. The motions were green, and the vomit was green too, with shreds of mucus stained with port wine that had been administered to her.

The vomiting was somewhat appeased by hydrocyanic acid in effervescing draughts; and she also took some chalk and opium, with a little gray oxide of mercury in it. But the vomiting did not cease till the 20th, after which she began to amend, asked for food, and was able to get up on the 22d, and to leave for home on the 26th.

CASE CLVI.²—Anne G—, aged 49, was admitted July 31st, 1857. She had been in her usual good health up to a month previously, when she caught cold from exposure, and distressing nausea and vomiting ensued, which in a few hours was followed by purging; the stools being watery, frothy, and free from offensive odor. The skin then was cool, her tongue clean, the pulse 85. The purging continued at the rate of four motions daily. She vomited after each attempt to eat; the ejecta being green and yellow, mixed with clots of mucus and undigested food.

The patient had also considerable anasarca of the lower extremities, and she suffered from palpitations. The force of the heart was weak, but the sounds natural, and the lungs healthy.

She was treated without drugs, but had five grains of pepsin powder three times daily, half a pint of beef-tea, and milk diet guarded with lime-water, food being administered in small quantities every three hours.

By the 8th of August she was so much better in all respects, that she was able to eat mutton-chop, and to take a grain of quinine dissolved in tartaric acid three times a day.

On the 12th she had the full hospital diet. The bowels having become costive, an aloës and myrrh pill was ordered every night.

On the 15th, there being still some pain at the epigastrium complained of, the solid diet was reduced to half, and a pint of beef-tea was given for supper.

There was also, on the 17th, a threatening of return of diarrhœa;

¹ Case CLXIX. in 2d edition.

² Case CLXX. in 2d edition.

but it was promptly stayed with chalk mixture, and she was discharged well on the 19th.

Remark how in the first of these two cases the preceding diarrhœa did not prevent the occurrence of stomach symptoms, and how long they endured in the second case where the diarrhœa had come on at the same time.

I abstained from perturbative practice during the height of the disorder, not out of septicæism in the pharmacopœia, but the contrary; there was no physical condition capable of establishment by its means which I would have wished to induce.

The costiveness of the bowels after a natural diarrhœa is a very usual reaction. Had astringents been given, one might have attributed it to them.

The weakness of this patient was shown by the anasarca; but we had no reason to suppose that there was any chronic degeneration of the viscera, or she would have been retained in hospital.

In the next case the character of the disease is much more chronic.

CASE CLVII.¹—Helena F—, a domestic servant, aged 40, admitted February 25th, 1858. Since the beginning of December she had complained of uneasiness at the epigastrium after meals, accompanied by nausea. Six weeks before admission she began to relieve the feeling of weight by vomiting her food several times a day, and in the morning to vomit frothy and stringy matter occasionally streaked with blood. She never threw up any *clots* of blood, and it was always of a dark color. Since her illness the catamenia had ceased, having been previously copious and painful; she had got very much emaciated, and in good truth, she presented an aspect closely resembling that of pulmonary consumption. But stethoscopic examination of the chest showed it to be quite healthy, and she had no cough.

The absence, however, of cough is no proof of the absence of pulmonary lesions in the sort of case which at first blush hers seemed to resemble. For instance:—

CASE CLVIII.²—Mr. J. P— came to me May 30th, 1860, complaining of flatulence, and of uneasiness without pain in the epigastrium, and of having become muscularly weak and nervous. He frequently threw up, as he said, from the stomach, stringy mucus, especially after eating. But it was not mixed with food in general. He had no cough. He remained under my care till the 10th of June, when I examined his chest, and was bound to tell him that I found bronchophony, crackling râles, and dulness on percussion at the apex of one lung. He seemed dissatisfied with the diagnosis, and I did not have another visit.

¹ Case CLXXI. in 2d edition.

² Case CLXXII. in 2d edition.

I should like to have made out for sure whether the mucus really came from the stomach, or whether it was the contents of the bronchi thrown up by a nauseating effort instead of a cough. Vomiting certainly does occur in phthisis, and the vomit contains mucus. But that mucus is also often purulent, which gastric mucus rarely is, so that it is probably swallowed or ejected from the bronchi by the emetic strain.

Such cases as the last should remind us always to examine the chest, cough or no cough, in any forms of disease which are ever associated with consumption. And the only way to guard one's self from the imputation of mistaking the disease is to declare the diagnosis to somebody at once, for the patient will often break down very suddenly while you are casting about for an opportunity of letting his state be known.

SECTION IV.

Vomiting of Blood.

The immediate symptoms differing from ordinary vomiting which precede and accompany the vomiting of blood, are described in the annexed cases:—

CASE CLIX.¹—May 13th, 1862. Mrs. H—, aged 42, awoke at two in the morning, feeling very hot and restless: a sudden faintness and dread came over her. Almost immediately, if not in the very act of rising, a flood of blood or bloody fluid gushed up from the stomach. She had not previously considered herself an invalid, but had for several months had irregular catamenia, and for three days before her attack, had experienced a dull pain at the epigastrium and right shoulder. On examination of the epigastrium, it was painful on pressure, but not one spot more than another. A feeling of nausea was excited by the examination, and also by taking food. The tongue was somewhat dry. She did not bring up her food; not even when the swallowing a cup of hot tea suddenly (on the 16th) had caused her to retch violently.

A pill was administered on the 13th, containing four grains of acetate of lead, and on the 14th she was ordered

R.—Acidi sulphurici diluti ℥xx,
Olei terbinthinæ ℥x,
Infusi hæmatoxyli flʒj, ter die—

and had no return of vomiting.

CASE CLX.²—James P—, aged 37, was admitted into St. Mary's Hospital May 4th, 1860. He had been long subject to vomiting, and

¹ Case CLXXIII. in 2d edition.

² Case CLXXIV. in 2d edition.

had five times vomited blood, for the last time the night before admission. The blood, he said, always came up with a sudden gush, and was dark in color. He described the symptoms preceding the hæmatemesis as commencing with headache and pain in the right side; after this he felt heavy and drowsy; then he got giddy; and then the blood came up.

The tongue was dry and furred, the pulse 92 and bounding. The pulsation of the aorta in the epigastrium was very distinctly felt.

(Further particulars of the history of this man may be found in Chapter X., Section X., where his case is repeated on another account.)

The above are the ordinary symptoms which occur without prognosticating any immediate danger. When a fatal result is to be feared, they are more severe.

CASE CLXI.¹—Hannah H—, aged 48, a cook, was admitted to St. Mary's June 24th, 1852, for hæmatemesis. She said she had brought up a great quantity of fluid blood the day before, and that while she was throwing it up, she felt complete inability to move her limbs.

While in the hospital, between that date and July 3d, she several times vomited blood, the vomiting always coming on quite suddenly without previous warning, but being followed by deadly faintness and by an increased pallor of face. On the last-named day, as the house-surgeon was going his morning rounds, he saw her suddenly turn paler, and so he laid her back on the pillow. In ten minutes after she threw up a quantity of liquid florid blood, mixed with clots. She did the same an hour afterwards, and again in the evening. She continued hiccuping, lay with her brows knit, but in no pain. The pulse rose to 136, the skin grew burning hot, the tongue coated with a white gelatinous fur. The voice was reduced to a whisper. In this state of hemorrhagic fever she continued, without becoming comatose, till she died, about fifty-five hours after her last vomiting of blood.

Post-mortem.—It was found that an ulcer had eaten into the coronary artery of the stomach.

The symptoms may be nearly as severe in cases which do not ultimately prove fatal.

CASE CLXII.²—May 24th, 1848, I was summoned to Mrs. M—, aged 82, who had fallen down that morning in a sort of fainting fit. On recovering herself, she threw up, as was alleged, from the stomach about a wineglassful of blood. The tongue was dry, and in the centre brownish. The epigastrium was painful on pressure. The pulse exhibited the largeness and loose sharp stroke distinctive both of the hardened arteries of old age and also of hemorrhage, both of which factors probably were united in this patient.

The next day the tongue was quite dry and brown, and the abdo-

¹ Case CLXXV. in 2d edition.

² Case CLXXVI. in 2d edition.

men more painful on pressure. She had vomited a great quantity of red and black blood, and passed a number of black stools.

On the 26th the tongue got moister. On the 27th she again fainted, and her face became anxious, and the tongue dry and brown. I thought she would vomit blood again, but no, she only passed it in a black stool. On the 28th she was better again, and with one more relapse on the 29th, she finally recovered, and had no return of bloody vomiting, though she lived several years afterwards.

The treatment had been lemon ice, bark, alum, opium, and sulphuric acid.

She must have had a very vigorous constitution to have survived such a serious illness at such a time of life.

Apropos of age the following case may have an interest, for I think it is the next oldest patient with the complaint that I have had under my charge:—

CASE CLXIII.¹—Elizabeth A—, age 60, was admitted into St. Mary's August 21st, 1855. She called herself a strong, healthy woman, though subject to occasional "bilious attacks" and ruptured on one side. After feeling a weight in the belly for a week, she had, on the 11th, vomited a small quantity of blood. On the 18th she again vomited, and this time nearly a quart of blood, bright-colored and with clots in it, but not frothy. There was slight pain on pressure of the epigastrium, but this she said was much more severe at the time of the hæmatemesis. She also passed black blood by stool. The hepatic dulness was normal.

She was but little pulled down by her attack. So, after a fortnight's rest in the hospital, she went out.

A contrast is afforded by the next, who is the youngest patient I find on record.

CASE CLXIV.—Charles D—, aged 3 years and 10 months, was admitted into St. Mary's Hospital, under Dr. Sieveking, on June 15th, 1867. His mother stated that he had diarrhœa for a fortnight, and passed blood in the motions until the 11th of June. The child was excessively weak; and, as she was very poor, she could not get nourishment for him—in fact, she and her children had been half-starved for some time. On June 12th, after taking some tea, he was very sick, and vomited about an ounce of dark blood. The vomiting continuing after every meal, she brought him to the hospital.

Soon after his admission, he vomited a small quantity of bright blood. He was very much emaciated, and very restless. Pulse 110. The tongue was coated with a dark red stain in the centre of the dorsum, which disappeared in a few days. A mixture was ordered to be taken every four hours, containing ten minims of dilute sul-

¹ Case CLXXVII. in 2d edition.

phuric acid, with a drachm of syrup, and three drachms of pimento-water. He was directed to have simple diet, with isinglass-jelly, iced milk, and broth.

June 16. He was better to day. He still vomited after both liquid and solid food. The quantity of blood was very small. There was pain on pressure over the epigastrium. The child did not sleep, crying a good deal. Two minims of tincture of opium were added to each dose of the mixture.

17th. He slept well in the night. He brought up about six drachms of dark blood this morning after breakfast. The tenderness over the epigastrium was increased. Pulse 114.

18th. There was less tenderness on pressure. He still had vomiting; but the quantity of blood was very small.

19th. There was no pain in the epigastrium. There was vomiting still; but no blood at all to-day.

20th. He was much better; more cheerful. He kept his breakfast down; and only vomited once during the day—no blood. Pulse 108. The acid mixture was discontinued, and a powder of a grain of tannic acid and five grains of sugar ordered to be taken three times a day; he was ordered one drachm of cod-liver oil three times a day.

21st. There was no vomiting to-day. He asked for more food.

23d. The powder was discontinued. Half ordinary diet ordered. He had no sickness.

26th. He went out quite well, having gained flesh considerably.—(See *British Medical Journal*, August 3d, 1867.)

The child had been so very ill-fed, that his blood had become considerably impoverished, and a scorbutic diathesis had been engendered, to which Dr. Sieveking was inclined to ascribe the hemorrhage.

Vomiting of blood may occur again and again without risking life.

Sometimes it is an unusual affair, as in Case CXL., and again in the following:—

CASE CLXV.¹—Henry A—came under my care at St. Mary's in November, 1862, having in October, on two occasions, in going home from his work, thrown up what seemed to him near a pint of blood. The same patient had, in October, 1861, also been in St. Mary's for hæmatemesis. It is right, however, to remark that he had emphysema of the lungs as well; so there might perhaps be a question about the certainty of the diagnosis of the blood coming from the stomach.

In the following cases there were intervals of three or four years:—

¹ Case CLXXXVIII. in 2d edition.

CASE CLXVI.¹—In the middle of September, 1855, Selina Y—, a widow of 48, was woke up at two in the morning by a single attack of profuse hæmatemesis. She was my patient at St. Mary's for the weakness thence arising, but she was not alarmed at the occurrence, as she had been ill in the same way three years previously.

This woman experienced again another gush of blood in October, 1859, and was under my care at St. Mary's afterwards. Whilst in the house she had waterbrash one morning, and ejected a cupful of clear aqueous fluid with streaks of red in it. She reported that in the interval of the two admissions she had lost no blood.

It is remarkable that in this case there was no tenderness of the epigastrium.

CASE CLXVII.²—Catharine C—, a servant, aged 28, was admitted to St. Mary's October 19th, 1858, for an attack of hæmatemesis which had just occurred. She described herself as a person of good constitution and strong body, but she acknowledged to having had a similar illness three years previously, which had reduced her more than the present one. The ejecta had consisted of what seemed to her a pint of blood, at about 4 P.M. on three successive afternoons, with very slight antecedent symptoms.

Again a longer interval:—

CASE CLXVIII.³—Elizabeth F—, a servant aged 23, retched up a tumblerful of blood a few days before her admission to St. Mary's, May 30th, 1862. She said the same thing had happened eight years before to a greater extent, and that ever since she had, besides irregularity of the catamenia and debility, suffered from time to time with sickness after meals, but had not seen any red color in it till the present occasion, a few days before admission. She had again several attacks of vomiting whilst in the hospital, but threw up no sanguineous fluid.

And again a longer:—

CASE CLXIX.⁴—At the beginning of February, 1862, I was requested by Sir Ranald Martin to meet in consultation on the case of a gentleman about 60 years of age, who was gradually dying of excessive vomiting. He was an old Indian, and he described the first beginning of his gastric ailments, leastwise the first thing which drew his attention to the stomach, to be an attack of hæmatemesis thirty years previously. Twelve years after that he had another, and two or three at shorter intervals which I forget. But during the final attack of vomiting, of which he died in the course of the spring, he lost no blood, the cause of death being the excessive exhaustion and emaciation only. It was diagnosed all along, and proved by autopsy to be due to a gastric ulcer now preserved in St. Mary's Museum.

It would probably not be difficult to fill up all the intermediate years with instances, but those quoted are enough to show that

¹ Case CLXXIX. in 2d edition.

² Case CLXXX. in 2d edition.

³ Case CLXXXI. in 2d edition.

⁴ Case CLXXXII. in 2d edition.

blood in the vomit is not by any means a sign of immediately impending danger. It would really seem, unless those bad symptoms detailed in the two consecutive Cases (CLXI. and CLXII.) should be present, to afford in itself a good omen for some time to come.

The appearance of the blood vomited is very various.

Sometimes it is seen in *streaks* among the mixed matters ejected. See case of Helena F—, Case CLVII.

More commonly it comes in a *gush*, as in James P—, Case CLX.; Selina Y—, Case CLXVI. &c.

Sometimes it has remained long enough in the stomach to become *coagulated into large masses*, and then it is somewhat hard of ejection.

CASE CLXX.¹—James M—, a potman, aged 32, was attacked at the beginning of April, 1860, with pain of a continuous character in the pit of the stomach. This continued getting worse till the 16th, when in the act of vomiting, to which he had become subject, he brought up about half a pint of blood black in color. In the afternoon of the next day, he brought up as much as three pints of thick black blood in masses so tough as nearly to choke him. The tongue, however, remained clean and moist, and the pulse was only 74; the heart and lungs were healthy, and he had lost the pain in the epigastrium even when it was pressed. All which things considered, it was not thought right to detain him above four days in hospital, especially as he wanted no medicine.

Towards the end of the year this man was again in hospital for pneumonia, and we were able to ascertain that he had experienced no return of hæmatemesis.

Sometimes the sanguineous effusion has remained long enough not only to be coagulated, but to be *partially digested, or rather cooked*, by the gastric acid; and then it assumes the reddish-brown color that it does in black puddings or German sausages from a similar partial cookery. It is more like that than coffee grounds.

CASE CLXXI.²—Henry C—, aged 50, was admitted under Dr. Nairne into St. Joseph's Hospital in March, 1842, and died in about a month with an enormous cancerous mass in the liver; part of this had ulcerated the wall of the stomach by pressure, leaving some blood-vessels with open mouths, which must have continually been pouring out their contents. There was no cancer of the stomach itself. The

¹ Case CLXXXIII. in 2d edition.

² Case CLXXXIV. in 2d edition.

vomit during life consisted of "coffee-grounds" (as technically called), with only an occasional admixture of red blood.

From this instance it is evident that "coffee-ground" vomit does not exude in the state in which it is seen (for here, of course, it must have exuded red), but has remained for a certain period, I cannot say how long, in the cavity. The brown stains found in the walls of mucous canals after death are in fact ecchymoses, which have probably existed a long time.

Sometimes the color is still more changed—it turns *green*.

CASE CLXXII.¹—John N—, aged 35, a painter, admitted to St. Mary's Hospital April 10th, 1858. He had constant pain at the cardiac end of the stomach (increased by pressure), waterbrash, and frequent inability to keep down his food. On the 15th he vomited half a pint of grass-green matter, which was intensely acid to test paper, complaining at the same time of pain between the shoulders and of acid rising in the mouth. On the 16th, before breakfast, he vomited some of the brown matter usually described as coffee-grounds, after which the acid rising in the throat was alleviated for a few days. On the 28th it was found that there was blood in the vomit; but he does not seem to have had any gushes of it. On May 8th he is reported as having vomited the green fluid and blood also. I have no further notes of the alterations in appearance of his vomiting; but it was relieved by leeches, and he was made an out-patient.

— One cannot doubt that the various colors visible in the vomit were due to one and the same cause, namely, blood. The great acidity of the fluid forbade the idea that it consisted of bile, or even that there was bile enough to color it.

Another mode in which hemorrhage of the stomach manifests itself, and by no means an uncommon mode, is by the stools being stained black or blackish-red.

CASE CLXXIII.²—Esther R—, aged 34, admitted to St. Mary's October 14th, 1853. She had been in St. George's Hospital six years before for hæmatemesis, but what she complained of on admission was the passage of blood for the last two months by the bowels; and truly enough we found the stools sometimes with inky matter intimately mixed up with them, sometimes exhibiting clean masses of red blood. She was much weakened and blanched by the loss. Desirous of assigning this to its apparently most probable source, I treated the patient first with purgative enemata, and then with terebinthinate and astringent (iron alum) enemata, and gave her also decoction of bael, which is said to act most on the lower bowel. Nothing stopped it till she took \mathfrak{m}_{xx} of sulphuric acid with \mathfrak{m}_{ij} of Battley's liquor sedativus three times a day. A few days after

¹ Case in CLXXXV. in 2d edition.

² Case CLXXXVI. in 2d edition.

commencing this she had a natural fecal evacuation, and then improved rapidly under the use of quinine.

It is clear that the last-used course of treatment must have acted upon the stomach principally, for it certainly does not stop bleeding from the colon. And from the stomach came the hemorrhage on a former occasion; so that I presume it did so on this also.

Why had she bloody vomiting in one illness, and bloody stools only in the other? One may lawfully conjecture that the lesion which was the fountain of the hemorrhage had extended gradually nearer to the pyloric orifice, and was at last so near that the sphincter did not block the passage through—that is to say, it was in the pylorus itself.

This escape by the ordinary course of the alimentary canal is a very dangerous course for the hemorrhage to take; for instead of causing extraordinary, even unwarrantable, alarm, as hæmatemesis does, it is liable to evade notice till the patient drains to death. It was nearly doing so in the case quoted. The same risk was run in the next case.

CASE CLXXIV.¹—Sarah G—, aged 33, a housemaid, always enjoyed good health till the middle of June, 1857, when she was laid up with sore-throat at first. This passed into a wearing pain at the epigastrium, aggravated by food, and accompanied by several attacks of vomiting, during which she threw up blood. She became an out-patient at St. Mary's under Dr. Markham's care; and he finding her weakness and paleness increase with alarming rapidity, and seeing the tongue dry and furred as in hemorrhagic fever, recommended her being admitted on August 22d. We then found, as Dr. Markham had suspected, but the patient constantly denied, that she passed blood by the bowels whenever they were opened. This required to be done by artificial means, for she was very costive. On one occasion the feces contained a clot of fibrin, washed colorless, as big as an egg. After observing and examining her for a few days, I gave her

R.—Plumbi acetatis gr. ij,
Opii gr. $\frac{1}{4}$. In pilula ter die.

She took this for three days, and then her bowels were open of their own accord, and she passed a dark feculent solid stool, containing no blood. The pills were therefore left off, and she was treated with occasional doses of castor oil to clear the bowels of the remedy.

But, for some reason or other, perhaps a relapse of the hemorrhage, I began the acetate of lead again on September 16th, giving it her only at night however. On the 21st she passed a quantity of flocculent fibrin without blood. On the 23d a blue border was observed

¹ Case CLXXXVII. in 2d edition.

along the gums, so the lead was again left off, and she does not seem to have lost any more blood during her residence in the hospital, viz., till October 16th.

This is the worst of acetate of lead—you are so likely to have the chronic poisoning peculiar to the metal induced by it. It seems to occur in direct proportion to the length of time the salt is taken, and not to the dose. It is better on this score to give a very few large doses, even to run the risk of griping your patient, than many small ones. A couple of doses of ten grains each will likely enough be sufficient. I have so administered it in hæmoptysis with great satisfaction.

More usually the bloody vomiting and black stools occur at the same time, and then there is no difficulty in discovering the true cause of the latter. The following is the most familiar history:—

CASE CLXXV.¹—Eliza F—, aged 35, was admitted to St. Mary's August 21st, 1860, having for a fortnight suffered from vomiting of her food, tasting and smelling sour. That morning she had begun to consider her case serious, from having thrown up in addition some clotted blood to the extent of a few ounces. There was pain in the epigastrium, running through to the back, and increased by very slight pressure.

She was ordered a blue pill and castor oil, and then twenty minims each of sulphuric acid and oil of turpentine in a mixture three times a day; also ice, milk, and cold beef-tea, like all other patients with hæmatemesis: but the next day the treatment was discontinued, as the vomiting had ceased.

There was no more blood thrown up till the 23d; the medicines were resumed, and it ceased. But all along she was passing black stools, as of digested blood.

Then her bowels became costive, and she took only some decoction of cinchona, and was discharged on September 7th.

(These two last cases have been related before, as instances of "wearing pain.")

To find the remains of blood in the stools is very satisfactory in hospital practice, in order to confirm the statements of the patients, which are not always to be trusted. They will talk about throwing up blood to excite attention, when in reality it is only simply vomiting.

Besides designed imposition, we have also to guard against the mistake of confounding blood coming from another source with that from the stomach. This is easy enough to run into. An example of the doubt has been given in case CLXV.

¹ Case CLXXXVIII. in 2d edition.

Waterbrash is sometimes found along with vomiting of blood. It is remarked in Case CLXVI. Selina Y—, and also in Case CXL. Sarah S—.

It was observed again in the following:—

CASE CLXXVI.¹—Mary S—, a cook aged 23, was ordered to St. Mary's July 27th, 1853. She stated that her health had always been excellent till six months previously, when she began to experience pain in the chest, and frequently to vomit after her meals. She brought up her food mixed with a yellow (? sanguineous) fluid. She was under medical treatment and got cured. But six weeks before admission the pain returned. Frequently instead of vomiting she used to eject a quantity of clear watery fluid (waterbrash). But what brought her to the hospital as an in-patient, was her having three times lately thrown up blood by vomiting. Previous to the hæmatemesis there had been felt darting pains in the epigastrium. Rest for ten days in the hospital, and a half-a-dozen leeches to the epigastrium, put a stop to all the symptoms, and at her own desire she returned to her situation; so there was evidently no sham in the case.

I suspect in these cases, where waterbrash is joined to bloody vomiting, that the lesion which occasions the latter is near the cardiac orifice. You do not have here the pains in the right shoulder which point to pyloric lesions.

I have spoken without hesitation of hæmatemesis as arising from some lesion of the mucous membrane, by which a more or less number of larger or smaller bloodvessels have been broken. The precise mode in which the rupture is effected is not easy to ascertain. But it does not require any very great violence. A blow on the epigastrium not hard enough to bruise the outside skin may, for example, cause it; as in the following:—

CASE CLXXVII.²—Sarah L—, aged 45, the drunken wife of a laboring man, had a fight with her husband, and got a black eye, a kick on the back, and a punch on the belly. The two former were visibly bruised, but not the latter. She was brought to the hospital April 3d, 1856, because on going out into the Edgeware Road the day after the fight she felt very faint, and threw up a good deal of blood. It was at first considered to have come from the thoracic viscera, seeing that she had no bruises or pain on pressure in the abdominal region. But examination with test paper of what she had thrown up on her clothes showed it to be acid, and, therefore, to have come from the stomach. The pulse was hardly to be felt; she was delirious, the

¹ Case CLXXXIX. in 2d edition.

² Case CXC. in 2d edition.

skin clammy, and the feet cold; so that we had to rouse up her ebbing life with hot water and mustard applied to the skin.

She had also $\mu\lambda\lambda$ of oil of turpentine every hour by the mouth; but as at night she still continued vomiting blood, a slab of ice was laid on the epigastrium, and alum and tannic acid administered by the mouth.

Next day the bleeding had ceased, the pulse became more perceptible, and the mind clear.

There was no return of serious symptoms, but I kept her in till the 21st for safety.

In the last history it was mentioned that there being no pain in the epigastrium made the diagnosis doubtful at first blush, though the injury was proved so indubitably to be in the stomach by after events and observations. In the case of Selina Y— (Case CLXVI.) there was also no pain in the epigastrium. Perhaps a clue to the condition existing under such circumstances may be afforded by the following:—

CASE CLXXVIII.¹—Elizabeth A—, a cook, aged 35, unmarried was admitted to hospital under me June 10th, 1861. She had the appearance of good health, and said she had always enjoyed it till five days previously, when she felt so nauseated and giddy that she thought a bilious attack must be impending. A disagreeable rising in the throat lasted all day, and at 10 P.M. she vomited violently and threw up blood. There was perhaps also bile mixed with it, as she said it tasted bitter. This was on a Wednesday, and on Friday she again vomited blood and passed black motions, and on the Monday came to St. Mary's. In the meantime she had been taking pills bought at a small chemist's shop, and, therefore, probably containing mercury, the usual panacea in counter practice. At all events, she was salivated on admission.

In this case there was no pain in the epigastrium without or with pressure. The liver on admission was found much enlarged laterally and vertically, yet neither was it painful on pressure. She had no medicine.

On the 12th the liver was much smaller. The black color had disappeared from the motions, and she had no more vomiting of blood, and went out on the 28th.

I suppose the cause of hæmatemesis here was congestion of the liver—a condition which is said often to occur in practice, though I confess the cases where I can make it out by percussion are exceptional in my experience.

Absence of pain from pressure of the epigastrium may also arise from the lesion being in a part defended by the walls of the chest.

¹ Case CXCI. in 2d edition.

CASE CLXXIX.—In the Museum of St. Mary's is a preparation of an active bleeding ulcer, situated on the edge of the cardiac orifice of the stomach. This was taken from a middle-aged tradesman attended by Dr. Glover, of Islington, and me, in 1868, who during twenty years had experienced many attacks of hæmatemesis. These old attacks seemed very probably due to an old ulcer which had cicatrized near the pylorus, and which was not sore on pressure.

It is sometimes assumed that the blood in hæmatemesis comes either from the stomach, or at least from some part nearer the mouth, not from a more distant viscus. But in the following instance the source of the hemorrhage was beyond the pyloric valve, and thus the difficulty of the anatomical diagnosis¹ was considerably enhanced.

CASE CLXXX.—Alfred F—, laborer, aged 25, was admitted to St. Mary's July 15th, 1859, with vomiting of his food mixed with blood, of three weeks' duration. There was much pain, increased by pressure, from the middle to the right side of the epigastrium, and a hardness was felt there by the finger. This he thought had been the case two months. There was a strong pulsation communicated to the hand, and a whiz to the ear, on examining the abdominal aorta somewhat to the right of the navel.

After admission the vomiting continued unabated. He could hardly keep down even iced milk. What he threw up besides food was of a brownish color, as if half-digested blood. Then he had in addition an attack of jaundice, the skin and urine being deeply stained with bile. He sank very low, his skin grew cold, and on the 30th he was reported, by the clinical clerk, as "positively moribund." But the next day he rallied, he ceased to vomit, and at the same time both the jaundice and the tumefaction of the epigastrium and hypochondrium abated. On August 4th he began to relish his food, got his natural color, and continued improving up to the morning of the 7th; when, on attempting at 4.30 A.M. to rise to make water, he fainted, and remained much depressed all day. His feces were then natural; but on the night of the 7th he passed a black motion; after which he rallied, and enjoyed a chicken for dinner on the 8th. But the same night he fainted twice. From the second faint he never recovered, but lapsed into a state of coma, in which he died, after passing some black motions.

At the autopsy there was found in the duodenum, just below the orifice of the gall-duct, an ulcer the size of a crown piece, and adhesions uniting it to the pancreas and liver. The latter viscus the ulcer

¹ *Anatomical* diagnosis distinguishes the part of the body injured; *functional* diagnosis the vital actions which are failing; *therapeutical* the deficiencies capable of being supplied by art. The most perfect includes all three of course; but each may be complete in its kind independent of the others and in practice much confused thought arises from not keeping clearly in view the separate intention of our observations.

had apparently penetrated, and opened into some of the bloodvessels, for the hepatic tissue was perfectly bloodless and pale. The bile-ducts in the liver were large and apparently dilated, but the gall-bladder was of natural size. Both small and large intestines were filled with blood partially blackened by semi-digestion.

From the cases above detailed I would conclude that the vomiting of blood denotes, if not perhaps an open bloodvessel, yet such a lesed pathological state of the mucus membrane as requires a completely alterative renewal, and that such alterative renewal is best brought about by general analeptic remedies, by the local removal of congestion, and by the restoration of capillary circulation through local depletion. I should infer also that the quickest arresters of the immediate hemorrhage are turpentine and acetate of lead internally, and ice externally.

SECTION V.

Acid fermentation of Vomit.

The contents of a healthy stomach ejected by an accidental cause have a certain amount of acid reaction from the presence of the acid gastric juice, and indeed this is necessary to their solution. And a degree of sourness in the viands consumed seems to favor this digression. So that acidity in itself is not a morbid phenomenon in vomit.

Let it be understood, then, that I do not refer in this section to the ordinary normal acidity of the gastric contents, but to the fermentation, principally into acetic acid, of the whole mass, to a decomposition of undigesting food.

For truly in some cases of vomiting the excessive sourness of the fluid is a very marked feature. The throat is burned by it, the teeth roughened, and the eyes made to smart, just as by taking into the mouth a strong solution of acetic acid. And the sour smell of an acid volatile at a low temperature is diffused through the air. In fact the whole mass of the ejecta has become acid, instead of merely having acid mixed with it.

The cause is the retention in the stomach of the remains of the meal so long that they have had leisure to ferment throughout, instead of being digested as they become soured by the gastric juice. The cause of the retention most generally is the coating of the living membrane with adhesive mucus, which impedes the peris-

taltic movements and prevents the gastric solvents from penetrating the mass. The acidity does not cause indigestion, but the indigestion causes the acidity.

Besides retaining the mass so long that any internal decomposition to which it may be from its nature apt is aided by time, the mucus also in itself is an encouragement to chemical action. A familiar instance of this is the rapid decay of urine in a catarrhal bladder. The mucus is probably itself in a state of chemical change, which is thus propagated to the mass.

The decomposition of the mucus is shown by the frequency with which different sorts of low parasitic growths, or moulds, are developed in it. The well-defined species *Sarcina Ventriculi* is the most distinctly marked of these, which, though detected occasionally elsewhere, certainly finds its most congenial home in the stomach. In other places it has been found in completely dead matter (as by Virchow in gangrenous lung) or else a floating wanderer in excreted fluids,¹ but on the lining membrane of the stomach it may be seen fixed and growing in the mucus. It is not often that an opportunity occurs of proving to the eye that such is the habitat of the *Sarcina*—we frequently find it vomited, but the patients seldom die during their illness, the complaint not being a fatal one. One indeed has offered itself to me in Case CXX., a girl of fourteen, who died in St. Mary's Hospital of enlarged heart.² She had frequent attacks of sour, but not frothy vomiting, before death, and at the autopsy we found the great curvature of the stomach thickly clothed with a stringy mucus, very difficult to detach, in the outer layer of which a considerable quantity of *sarcinæ* were imbedded.

It is pretty clear from this that the mucus, and not the stomach's contents, is the root-soil of the *sarcina*.

Being fixed then in a permanent home, and rapidly replacing with new growths those which are wiped away by the food, the *sarcina* is probably not inert. A great number, perhaps all, of those cryptogamous plants whose nature is to grow upon decomposing organic matter, have the property of promoting decomposition, so that they are not only consequences, but causes also of decay. It is found, for example, that the gutta-percha covering to electric-telegraph wires, when laid down near the roots of oaks, becomes rapidly rotten from the presence of a fungus peculiar to that

¹ Parkes, "On the Urine," p. 213.

² See page 163.

tree. Put your jam in a new cupboard, and it will keep much longer than in one where mould has previously grown. Saving housewives used formerly to keep what they called a "vinegar plant;" it a simple-celled cryptogam found in old casks. If placed in sugar and water, it makes the whole undergo the acetous fermentation in two or three weeks, instead of the process occupying several months. The mould found in yeast (the *Torula Cerevisiæ*) though not essential to alcoholic fermentation, certainly augments the rapidity of its induction; so that it is entirely in accordance with known physical laws if the presence of sarcinæ, or of the yeast-plant, on the mucus of the stomach, should bring on fermentation in the food before the obstructed absorbents have time to take it up. Both have been found in the contents of the stomach ejected; and it is shown by the case I quoted, that sarcinæ at least may exist adherent to the mucus without being thrown up, at least in quantities sufficient to be discovered. Probably oftener than we fancy these moulds are unseen promoters of the rapid fermentation which takes place so mysteriously in the stomach of invalids.

The chief factors in the fermentation then I take to be mucus adherent to the walls of the stomach. With this mucus there gets intimately mixed up some dead animal matter which decomposes and moulds and so encourages the fermentation. The dead animal matter often is blood exuding from the gastric parietes; for the mucus is so tough that the food taken into the stomach has much difficulty in blending with it.

The following cases are typically illustrative:—

CASE CLXXXI.¹—Cornelius K—, a laborer, was admitted to St. Mary's June 27th, 1856. For the last ten years he had been in the habit of occasionally vomiting blood, on the average about three times a year. Of late he had vomited more frequently, but there was not always blood in what he threw up. Sometimes the vomit was very fluid and sour, sometimes it contained yellow matter, and when blood was thrown up it was dark and clotted. He had constant pain in the epigastrium, but that was much aggravated by pressure, and also before and after ejection. His most usual time for vomiting was about four in the morning; if it recurred again in the twenty-four hours, it was usually in the evening. He was much emaciated by his illness. The tongue was very clean.

After admission the vomiting was found to recur with regular periodicity morning and evening. The matter thrown up was copious, brown, and frothy. It diffused a strong smell of acetic acid. Often,

¹ Case CXCH. in 2d edition.

when left to stand, it went on bubbling and frothing, so as to flow over the edge of a small vessel. Once only were *sarcinæ* detected in it.

He was treated for a week with a drachm of hyposulphite of soda three times a day, but it did not seem to check the symptoms at all. He then had eight grains of quinine with twenty drops of laudanum every night, and for nearly a fortnight he did not throw up. However the trouble then returned, though not so periodically. He complained of loss of appetite and pain after swallowing fluids. He then had ten drops of oil of turpentine three times a day without benefit, and with some increase of pain at the epigastrium. Then he had six leeches on the epigastrium. After this the vomit, though intensely acid, seems to have contained no more of the brown frothy matter. He left the hospital August 4th, having gained so much flesh that he thought himself able to work.

CASE CLXXXII.¹—Eliza T—, aged 35, a married woman, was admitted to St. Mary's January 14th, 1853. She had a child nine weeks old, and during her pregnancy she related that she had suffered much from sickness. She also frequently had a pain come between the shoulders, which extended round to the abdomen, and lasted about four hours. Since her lying-in the sickness had continued, and on admission she had pain at the epigastrium on pressure.

After admission we found that she had constant uneasiness following her meals, and that she was never at ease till either the food returned spontaneously, or she ejected it by exciting vomiting. On examination of the matters vomited spontaneously, they were found frothy, and containing a considerable quantity of *sarcina ventriculi* in each specimen.

She was treated at first with leeches to the pit of the stomach and hydrocyanic acid internally. She got better at first, but then relapsed; when she was put upon two drachms of hyposulphite of soda thrice a day. She had no more vomiting at all after this, and went out in eleven days in good health.

CASE CLXXXIII.²—Mr. Edmund L—, aged 27, December 19th, 1861, for the last six months has been in the habit of throwing up an hour after many of his meals, especially dinner, a quantity of sour-scented matter, "frothing like yeast," according to his description. He has no constant pain at the epigastrium, and very little on pressure. His previous illnesses have been an attack similar to this seven years ago, and a sharp pain, like pleurisy, last year.

I prescribed for him—

R.—Sodæ hyposulphitis ʒj,
Acidi hydrocyanici diluti m̄v,
Misturæ Camphoræ fl̄ʒj. Ter die.

Dietary.

For dinner.—A mutton chop; stale bread, water.

For other meals.—Milk, with one quarter of its bulk of lime-water; stale bread or captain's biscuit.

¹ Case CXCIH. in 2d edition.

² Case CXCV. in 2d edition.

He vomited just after leaving my room, but only once again after commencing the use of the medicine. After a week he was troubled with some intestinal flatulence, which was entirely obviated by fifteen grains of charcoal every night and some pepsin at dinner. He had also some strychnine as a general remedy for his indigestion.

CASE CLXXXIV.—Mrs. G—, aged 67, for a dozen years before she came to me had suffered from daily vomiting, apparently of all ingesta, with the addition of a considerable quantity of opalescent fluid. After eating she has pain in the epigastrium, increasing towards the right side, which lasts till relieved by vomiting at various times from a few minutes to two hours after food. After it has been thrown up the vomit often ferments. She has had several attacks of hæmatemesis, but not for the last eighteen months. Five years ago she threw up a great quantity of blood at once. She has become emaciated by this long-continued invalid condition, yet her friends tell me she is a most energetic person, and rises early, and takes the management of her family and country household.

On my first examination of the vomited matter, I could find with the microscope nothing but fragments of quite undigested food, the muscular fibre showing the cross workings quite unaltered forty-eight hours after it had been ejected from the stomach. But when I examined some opalescent fluid thrown off the first thing in the morning there were bundles of various sized *sarcina ventriculi* visible in almost every drop looked at. There must have been a great deal of it developed. The bottle of it which was sent to me fermented, blew out its cork, and made a mess on my table.

On a manual examination of the abdomen I found no tumor, but a certain tension and pain on pressure in the pyloric region. I suspected an ulcer there.

Prescribed October 24th, quinine and strychnine with 3 minims of hydrocyanic acid twice a day, and a pill of $4\frac{1}{2}$ grains of compound kino powder, and an additional half grain of opium every night. Her diet was to be milk, of which she was to take a breakfast cup every $2\frac{1}{2}$ hours, with a teaspoonful of liquor calcis saccharatus in it. Once a day she was to eat slowly a mutton chop and a bit of stale bread.

I take it that the only thing proved by the presence of *sarcina ventriculi* is the detention of the mucus in the stomach for an abnormal length of time.

SECTION VI.

Fæcal vomiting.

To quote instances and discuss this subject in detail would be to travel out of the province of "The Indigestions" too far; yet a formal notice of it can scarcely be omitted from an enumeration of the morbid matters ejected in vomiting.

Fæces, or more strictly speaking, matters having a feculent smell,

are found in vomit only where a mechanical impediment has completely arrested the onward movement of the peristaltic wave in a lower part of the intestinal canal. It lasts as long as the impediment lasts, and ceases with its ceasing. The cure lies solely in the direct removal of the cause.

Fecal vomiting is popularly ascribed to a reversal of the peristaltic motion; but I do not think it desirable to resort to such a strained explanation. When we reflect that about twelve quarts of secretion, bile and intestinal juices together, not counting food, are daily poured into the intestines,¹ it is easy to see that the onward wave and absorption have only to be arrested for the ilia to be overfilled, and for their contents to overflow upwards into the stomach. There they naturally produce vomiting, just as they would if swallowed. No reversal of peristaltic action is necessary.

Such an arrest takes place most notably and obviously in strangulated hernia, when, without any inflammatory action having arisen, we have vomiting, which does not endure long without becoming feculent. And also in peritonitis, paralysis falls upon the muscles and absorbents of the bowels, inducing vomiting.

It is true that this vomiting in either case, though it tends to become feculent, does not always arrive at the point of being so. There may be too little feces already prepared in the canal to odorize the great mass of liquid; or the arrest of movement may take place too high in the ilia; or it may be just complete enough to fill the ilia while yet some feces drain off at the lower end. These circumstances do not alter the essential nature of the act.

The fecal smell of vomit is derived from the contents of the lower ilia, and not from the colon. I doubt much if liquids can overcome the ilio-cæcal valve, spite of its being paralytic. It is a valve, not a sphincter, and offers a resistance even in the dead body.

Fecal vomiting is terrible to think of, not only because to the medical man it suggests danger, but because it is in itself one of the most torturing of that series of agonies which our pitiful forefathers in nomenclature called "*Tormentum*," "*Miserere mei*," or even (adopting theological phraseology) "*Passio*," "*Passio ileaca*." We have modified the term to "*Ileus*," and I think we have a right, for we are in the road towards modifying the thing. I be-

¹ Bidder and Schmidt.

lieve the greater part, if not the whole, of the terrific phenomena of ileus, as we used to see it in our student days, arose as a consequence of the drastic purgatives administered. The effect of purgatives is to fill the intestines with fluid, and when the downward passage of that is obstructed, of course it overflows upward. In the two cases below which I have extracted from my journal, I was much impressed by the merciful sparing to the patients of the tortures of ileus.

CASE CLXXXV.—In the spring of 1867 I attended for three weeks Dr. W. D—, an elderly practitioner, who had made a competence and retired. In early manhood he had gone through several attacks of dysentery, and since the last he had always suffered from an exceedingly sluggishness in the passage of feces from the colon into the rectum. This was especially remarkable when his diet contained in excess matters difficult of solution. It continued to increase up to Ash Wednesday, when he ate a quantity of salt fish, and the bowels were never open again during the five weeks he lived. At first he had taken some purgative, and was troubled with vomiting, but latterly the only drugs he took were moderate opiates, and he had none of the distressing symptoms of intestinal obstruction. He required but little food, being habitually an abstemious man, so that there was not much rejeeta to distend the alimentary canal. He gradually and quietly sank, in spite of the performance, by two first-rate surgeons, of Amussat's operation in the left loin. The autopsy revealed a complete obliteration of the area of the sigmoid flexure by the contracting scars of old ulcers.

CASE CLXXXVI.—Lady C—, aged 65, had for some years been apt to have her bowels upset by changing her residence to any cold and damp locality. And this diarrhœa was usually accompanied by pain in the cæcal region. After a short attack of it in February, 1868, the action of the bowels ceased altogether during the last few days of the month, and they were never open again before death, which took place April 7th, without pain or distress. During this six weeks I prescribed as main treatment warm oil enemas and opiates. She so regulated her diet as to feel scarcely any distension of the bowels. Once she had a stout mercurial and other purgatives, but no good effects, and temporarily the usual bad effects, followed. So the sedative plan was persisted in, contributing certainly in a marked degree to the euthanasia. The patient was cheerful, even lively, up to the end. The situation of the obstruction rendered surgical interference inadvisable.

It would be impossible to cite these as specimens of ileac passion, though, anatomically speaking, all the conditions of the disease were fulfilled. But I have no doubt that active treatment would have soon rendered the descriptions of older pathologists accurate.

SECTION VII.

Vomiting of Food.

By far the most common cases of vomiting are those in which the ejecta consist of food scarcely if at all changed from the state in which it is swallowed. Sometimes it is moderately acid from the admixture of a small quantity of gastric juice; sometimes it is neutral.

It is not my intention here to discuss accidental or occasional vomiting from external causes, which may be considered rather the business of the physiologist, but such as having a deleterious influence on the general health comes under the care of the physician.

This sort of vomiting happens soon after food has been taken, and is always preceded by a feeling of discomfort at the epigastrium, often by nausea; indeed, it seems often to be a sort of semi-voluntary movement to relieve that discomfort.

I do not know but what in all vomiting there is something of an exertion of the volition; but in some cases there is a much more marked feature, and the voluntary character may be made use of in the treatment. It is an important point to observe, and I shall therefore cite first some typical examples of its being under the control of the will.

CASE CLXXXVII.¹—Miss Ellen B—, aged 14 or 15, was under my care in the spring of 1863, for general ill-health and emaciation. There were some glandular swellings in the abdomen and groin, but hardly enough to account for her extreme degree of emaciation, dry skin, and depression of spirits. On further inquiry it appeared that for four years she had experienced discomfort around the waist after eating, and had been in the habit of going away secretly soon after meals and vomiting up what she had taken. She said she could not help it, but yet it appeared that when circumstances prevented her retirement, she was able to restrain herself for a time. Acting on this hint, I desired her parents to exert their authority and forbid the ejection of food. I gave her (with the iodine ordered for the glandular swellings) some cod-liver oil, and sent her to be amused at the sea-side. In a fortnight I heard from her father that she had become convinced of the importance of keeping off vomiting, but that still from habit the food would rise, on which she swallowed it again, according to her own very appropriate phrase “chewing the cud.” The best evidence he could give of the success of treatment was, that she had gained in weight four pounds the first week, and four pounds

¹ Case CXCVI. in 2d edition.

the second. This girl, though neither hysterical nor insane, was yet very original in her notions, and had apparently out of her own head devised the vomiting as a relief to epigastric discomfort.

The vomiting may at first have been wholly intentional, but latterly it seemingly assumed a more involuntary and reflex character, as shown by the rising of the contents of the stomach into the fauces in spite of the efforts of the patient to keep them down.

In the following case the vomiting was at first involuntary, and then, when the patient got better and was really able to prevent it, she designedly induced it as a relief to her discomfort.

CASE CLXXXVIII.¹—Emily G—, aged 20, maid-servant, presented herself at St. Mary's, September 24th, 1858. She was reported subject to hysteric fits, for which she had already been an in-patient in 1857. She was very pale and leuco-phlegmatic, and the catamenia were irregular. She had an hysteric fit on the 25th. On the 28th she complained much of headache, and began vomiting after all food. The next morning the catamenia appeared. The vomiting continued very obstinate, in spite of valerian in decoction and tincture, and bromide of potassium. Shower-baths at last stopped it, and then she designedly brought it back by putting her fingers down her throat.

The next patient, being a man, and of mature age, was able to bring self-control more effectually into play in curing his disease.

CASE CLXXXIX.—W. R—, a photographer, used to consult me in 1857 and '8 about various little ailments which have no bearing on the subject of this volume. But among his other inconveniences was that of vomiting an hour after every meal. He said his food made him so uncomfortable, he was obliged to do it. This discomfort, on examination, seemed due to a movable tumor, about the size of an egg, pendulous inside the right hypochondrium. It seemed due to the dragging of this tumor at the stage of digestion, when the bile is poured into the duodenum; for on directing him to lie down at the time when the vomiting usually took place, the desire for it ceased. The nature and exact relations of the tumor to the viscera I do not know, as the patient is still alive and well.

In the next case the monthly derangement of females seemed to precipitate the tendency to vomit.

CASE CXC.—Ann C—, a married laundress, aged 40, had attended for several months at St. Mary's as an out-patient, without obvious benefit, before she was admitted on August 20th, 1852. Her previous illness had been jaundice in 1840, and hemiplegia in 1839. The use

¹ Case CXCVII. in 2d edition.

of the left side she had never entirely regained, and she thought that it had lately been "ereeping on again." Her chief complaint, however, for which she came, was what she called "derangement of the stomach," that is to say, attacks of vomiting frequently occurring. The most usual time of this occurrence was the catamenial period, when they would commence by the passage of much pale urine.

Other abnormalities in her body were a loud, mitral, regurgitant murmur in the heart, and a tendency to atonic gout. She had a slight attack of the latter in her great toe while in St. Mary's.

Her treatment at first consisted of corrosive sublimate, nitro-muriatic acid, and occasional purges. And either that or the coming into a new bed brought on an attack of vomiting. Soon with rest and *mistura ferri* she got much better. On September 1st the *mistura ferri* was changed for *mistura quinae* and beef-jelly. On the 9th she was able to take "ordinary" diet. But in spite of her improved condition the advent of the monthly course on the 13th, brought back a slight attack of vomiting, which was treated advantageously with hydrocyanic acid. (Simply omitting the quinine had failed to stay it.) Her sickness, however, this time did not lower her nearly so much as usual, and on the 17th she expressed herself able to go home, saying that she had suffered less while in the hospital than for months previously.

Functional vomiting will not uncommonly induce irregularity of the catamenia; or, if that is considered too dogmatic an assertion of the etiology of the case, we will put it in this way—functional vomiting is often a prior manifestation of the same diathesis which results in irregularity of the catamenia.

CASE CXCI.—Miss Louisa B—, aged about 22, has been subject for several years to attacks of vomiting. What is brought up consists simply of her food, which is rejected very soon after a meal. These attacks last sometimes several weeks, and cease gradually. They are almost always induced by extraordinary fatigue. Latterly they have been followed by irregularity of the catamenia several times, and notably on the occasion of her first coming under my notice.

The history of this said attack was that she started with her brother for a spring trip to the South of France and Italy. I fancy they rushed about in the usual precipitate British fashion; but at all events, they hurried along the Cornice road at a pace much quicker than its retarding beauties deserve. And the consequence was an attack of continuous vomiting, not to be appeased by a rest at Genoa; and, indeed, she does not appear to have kept anything on her stomach till she was brought back to London, where I saw her April 12th, 1867.

In appearance she was thin and exhausted, the hands and feet cold, the face pale, the lips blue. The tongue was clean, the abdomen retracted. There was tenderness on touching the epigastrium, increased to pain by pressure. This she reported always to be the

case for some time after her attacks, but she felt sure that between them she gets quite free from it. The pupils of the eyes were large and black, and the iris contracted but slowly even when exposed to the glare of a candle.

She was treated with valerian, quinine, and hydrocyanic acid internally, and applied an opium plaster to epigastrium. She took also shower baths.

I understand she had no further attacks during the summer.

In the last few cases the catamenial period seemed to bring on the gastric symptoms. In the next it relieved them.

CASE CXCI.¹—Mary H—, aged 16, was admitted into St. Mary's December 16th, 1853. She was complaining of flatulence in the bowels, eructations, and vomiting of food. She had been wearing a large wooden busk to her stays. The catamenia had been regular since the age of fourteen, except the last period, which was overdue ten days. She continued vomiting everything she tried to swallow all that day, the next, and the next after that. On the 20th she vomited part of her breakfast, and then the catamenia appeared, and she vomited no more, though kept in a few days to see if the symptoms returned.

When medicines can be kept down, a diffusible nervine stimulant is often rapidly efficacious in stopping vomiting.

CASE CXCI.²—Mary Ann T—, aged 18, was an in-patient at St. Mary's December 3d, 1855, for an attack of continuous vomiting of all food, which had lasted six weeks. She said she had been subject to attacks of this sort since her childhood; but they had not prevented her arriving at puberty at fourteen, and menstruating regularly ever since, having a good appetite, and growing up a plump, cherry-cheeked girl. She was given simple diet with milk and lime-water, with a mixture of rhubarb and gallic acid three times a day.

The sickness continued as bad as ever on the 5th, the bread and the milk taken being rejected exactly as swallowed. Then she was ordered

R.—Infusi valerianæ flʒj,
Tincturæ valerianæ co. flʒj. Ter die.

An immediate good effect followed. She did not eject the medicine, and the next day she was able to retain the milk. She had a little relapse of sickness on the 10th, but after that continued well, and left on the 20th.

But it is sometimes so bad that no remedies can be retained in the stomach, and then a very good expedient is to give the organ a complete rest.

¹ Case CXCVIII. in 2d edition.

² Case CXCI. in 2d edition.

CASE CXCV.¹—Esther D—, a stout young woman of 21, was admitted to St. Mary's August 23d, 1859. She had been ailing for a fortnight with headache and general malaise, and pain in the hypochondrium. On the 21st she had an hysterical fit, and afterwards commenced vomiting very violently. She had great pain across the pit of the stomach, and the vomiting and this pain were immediately induced by an attempt to swallow.

She lay on her back, with the knees drawn up like a person with peritonitis. But, very unlike a person with peritonitis, the abdominal muscles were very violently exerted in breathing. Her skin was hot and dry, her pulse 120, her tongue coated with a yellowish fur. Altogether, she was extremely ill, but a good deal of her febrile state seemed due to her being partially under the influence of mercury, which had been assiduously given up to her admission. The gums were ulcerated, and blood oozed from some part of the fauces, staining the vomit with streaks of blood.

Ten leeches were put on the epigastrium, but they did not seem to relieve the pain.

She was ordered to have no food or medicine by the mouth, but half a pint of beef-tea in an enema, with five drops of laudanum every three hours.

She was fed in this way for ten days, when some warm beef-tea was given her; that she threw up, but was able to retain it when quite cold. After this she was able to retain her food for a week or so. But then the vomiting returned, though not so bad as before. She was treated with valerian, with strychnine, and with blisters; but the success of each remedy was very temporary. On October 10th a cold shower-bath was ordered to be taken every morning, and an immediate stop was put to her vomiting. The symptom did not occur at all again, though she was kept in till the 28th, to be watched and to have the baths.

Entire rest given to the stomach for a few days will put a stop to vomiting of a much more chronic character, and even where the souring of the mass seems to point to something more than the functional nervous paralysis which has caused it in the cases already quoted.

CASE CXCV.²—Charlotte S—, a dusky, tough-looking spinster of 28, admitted to St. Mary's March 26th, 1860. Eighteen months previously she had caught cold, and after three days was taken with vomiting very soon after eating. The matters vomited are the food she has been taking, often accompanied by a considerable quantity of fluid tasting sour. This has made her weak, and diminished the catamenia, which are scanty, though regular, and accompanied by a good deal of pain. The last six weeks she had got worse, and could keep no food on her stomach at all.

On admission her pulse was 96, full and strong enough, the tongue

¹ Case CC. in 2d edition.

² Case CCI. in 2d edition.

was furred, the bowels were costive, the urine was slightly alkaline, not albuminous.

For two days she remained in hospital, vomiting all her food, but taking no medicine; for, either by accident or intention, I had written no prescription. On the 28th she was ordered to have no food by the mouth at all, but half a pint of beef-tea with five drops of laudanum as an enema every three hours. She retched no more.

On the 31st some milk and lime-water, in small quantities at a time was given her to drink, and she kept it down. Still, however, the enema was trusted to as the chief nutriment.

On April 4th she tried a mutton-chop, and succeeded in retaining it. On the 13th she left well.

It was observed that when she took to meat again the urine was acid, deposited urates, and contained a little albumen.

In the following case the habit was still more ingrained by time, and also the color of the vomit induced a suspicion that there was hemorrhage of the mucous canal in some part, either œsophagus or stomach, yet it was cured by a temporary rest.

CASE CXCVI.¹—Mrs. S—, a small, swarthy, bright-eyed woman of 22, was brought under my care March 9th, 1861, for constant vomiting of three years' duration, which she attributed to having caught cold during a monthly period, and having her courses checked for several months at nineteen years of age, when a virgin. Her food was always returned by the mouth within ten minutes after swallowing, and was unchanged in appearance. Besides this, she also vomited at other times, when the stomach was empty, if her mind was excited. Indeed she did so in my own room, ejecting some reddish-brown granular and flocculent matter, which looked exceedingly like semi-digested blood.

She was not much emaciated; her catamenia had returned; she had married six months before I saw her, and had a miscarriage at an early term of fetal life—four months after marriage. All which proofs of vigor seemed to show that a good deal of nourishment must escape the rejection by vomiting. She said she felt constantly hungry, and was evidently of an hysteric temperament.

I advised that she should be kept entirely without food and nourished by enemata of beef-tea and laudanum for a week, whilst at the same time the stomach was further quieted by the application of a few leeches to the epigastrium, and some bismuth.

On the 17th I heard from Dr. Woodhouse, of Hertford, who had undertaken to watch the case, that they had not arrived at continuing the treatment a full week, but that for two days the patient had taken food and kept it down. He reported well again on the 18th. But on the 20th he said the sickness had returned, with great pain in the right groin. It was again stopped by a recurrence to the treatment for a week. The whole number of days' rest was thirteen or fourteen. On the 28th Mrs. S— was able to take four small meals a

¹ Case CCII. in 2d edition.

day, and began iron and quinine, which on April 29th she was going on with, having had no return of her sickness. Five years afterwards, namely, in the spring of 1866, I heard from her sister that she had continued quite well ever since this decided treatment had been carried out.

In a former case (Esther D—, CASE CXCV.), the agency of complete rest to the stomach and of shower-baths may have been compared. The first seems more calculated to work powerfully and immediately, but the effect of the latter was more permanent. In the next case I trusted to shower-baths at once, and remarkable success justified the confidence.

CASE CXCVII.¹—Miss Frances C—, aged 21, a younger sister of the last patient, is a very plump girl, with a pink-and-white doll's complexion; yet when she first came to me, on the 4th of April, 1866, she and her mother positively affirmed that she hardly ever for five years kept down a whole meal. She seems a calm, sensible person, impressionable perhaps, but not hysterical. She says that by a violent effort she can just manage to keep things down; but that effort produces violent pain at the upper part of the sternum. The vomiting had been worse, and her efforts to restrain it more ineffectual since a violent purgative course which had been administered by an oculist to reduce an inflammation of the tarsi. Since then, also, her bowels had been very costive.

I ordered her a cold shower-bath at twelve o'clock every day, and the following draught:—

R.—Acidi hydrocyanici dil. \mathfrak{m} iv,
Tinct. valerianæ comp. fl \mathfrak{ss} j,
Infusi valerianæ fl \mathfrak{ss} j.

Bis die semi-horam ante-cibum sumatur.

On the 12th this medicine was changed for four drops of the prussic acid after meals, and

R.—Zinci valerianatis gr. iij,
Opil gr. $\frac{1}{3}$.
Omni nocte et mane.

On the 28th she called to show herself as quite well, but she purposed to continue the shower-baths every morning as a substitute for the British tubbing.

The hereditary nature of the constitution tending to this disease is shown by the two sisters being afflicted in a similar way. Seeing their mother one day I took the opportunity of cross-examining her, and found that though she had never been subject to vomiting, yet she used to have regular hysterical fits when a maiden.

¹ Case CCIII. in 2d edition.

Strong mental impressions sometimes have a singular effect both in bringing on and stopping chronic vomiting of this sort. An upsetting shock will induce a relapse; a calmative control, or the idea thereof, will arrest it.

CASE CXCVIII.¹—Miss Hannah M—, aged 19, was sent to me by Mr. Ayres, of Ramsgate, in January, 1858. After a preface of hysteria, she had suffered daily from rejection of food for six months, sometimes throwing up everything eaten, but always unchanged in appearance. She had also frequently difficulty in swallowing, so immediate was the rising of the gorge at food.

I gave her some valerian, and she was soon well. Then she went home to Ramsgate; and being soon afterwards frightened by a chimney catching fire, was attacked by vomiting again.

She returned to London and sent for me. Immediately on my visit—without any remedy—the vomiting ceased, and she swallowed everything easily. It was the most “*veni, vidi, vici*,” cure I ever saw.

The cure here was purely moral. And of shower-baths, too, I think we may class a great part of the strength among psychical agents. To take a cold shower-bath demands a certain control over the will, even when you are driven into it by a stern nurse, and the bracing up the mind to the resistance to the instinctive shrinking against the shock is the best possible lesson which the physician is at liberty to prescribe. Strength of will is gained by willing.

I have already said that I looked upon the temporary paralysis of the œsophagus as the most essential pathological condition in vomiting. A confirmatory evidence of this is found in some cases where temporary paralysis of other parts is exhibited along with the vomiting. I extract the following case out of my clinical lectures for 1863:—

CASE CXCV.²—“I will call your attention to a case of vomiting, namely, that of Hannah P—, aged 18. She is a respectable farmer’s daughter, and seems to have been much petted at home. She has large black pupils to the eyes, and puffy eyelids, and allows that before her present illness she used to have hysterical fits, but not since she has suffered from what she came here for, namely, chronic vomiting. I should rather call it a rejection of food, for it occurs even while food is being taken, almost always before it is swallowed. This happens at every meal, and has lasted a year and a half, and during that time she has been for a short time in her county hospital with relief but not cure. She has also pains in the back and in the

¹ Case CCIV. in 2d edition.

² Case CCV. in 2d edition.

splenic region. She declared she was unable to walk or even to stand without assistance, and when placed upright in the middle of the room she fell down at first. Nevertheless, after a scolding and a decided command to exert her will vigorously, she at last began to put one leg before the other, and progressed a few steps even on the first day. The catamenia had been absent three months, and indeed had never been established at regular periods.

"This girl, after retaining mutton-chops and porter for a fortnight, and exhibiting her muscular powers by a walk to Oxford Street and back, went home well July 13th. While in hospital (convalescent) she was employed about the wards; and being thus brought in contact with a young woman recovering from rheumatic fever, she infected her also with a desire to vomit; which, however, was checked in the bud. And I afterwards heard, from one of my pupils, that she next winter not only relapsed into her former condition, but again communicated it to a neighbor of her own age."

There is a peculiarity about psychical or ideational paralysis which in a great many cases guides to its nature—and guiding to its nature is here more than anywhere a most important step in the cure. When you set the patient up on the floor, assisting her with one or two hands, or with your hands under the axillæ, according to the degree of paralysis and the amount of aid wanted, the body is immediately thrown forwards, and all your strength is called for to prevent her falling on her face. Other paralytics fall to one side or the other, or backwards, and do not stumble forwards in this way. The peculiarity was well marked in the above instance, and aided the diagnosis.

So also in the vomiting which is associated with it in its nature there is a peculiarity which is a diagnostic guide. It can generally be controlled by a violent effort of the volition.

And thus to exert the volition is a help not only to the diagnosis, but to the cure, as has been shown by several instances of a typical sort.

Mention was made in a parenthetical addition to the history of this last case of the communicability of this kind of complaint. It is an instance of the mysterious power of sympathy which influences so much of our outward life from the cradle to the grave. In this instinct of imitation there are indeed degrees, but no essential differences, between that which helps the infant to acquire the power of speech, and that morbid condition in which the mind and body are slavishly enchained to reflect the acts engendered by the feelings of another. It is innate in all, but is weak or strong in proportion as the mind is capable of going alone, or is neces-

sarily in the habit of depending on others. This is the reason why it prevails so much among the female sex. There are so many instances of hysteria, chorea, and allied diseases whose pathology lies between mind and matter, being caught by lookers-on, that I cannot hesitate to call their transmission an infection by the eye.

Vomiting is often one of the symptoms in that perversion of body and mind, sometimes more of body and sometimes more of mind, which is brought about by indulgence in an excess of alcoholic stimulants. The pathology of alcoholism is very similar to that of hysteria, that is to say, to be sought for in the puzzling part of the circle of life which lies between spirit and matter. We know so little about the chain which connects the two, that its links are reckoned by us as few and short, we have no names for any of them; and in default of names for even the healthy functions, we must not expect an accurate nomenclature for their aberrations. So that the most we can do in trying to classify forms is to trace how near their origin lies to one or other extremity of the series of vital actions which are interfered with; what relation their phenomena bear on the one hand to mind, and what on the other to body. We shall thus have set in a natural series the varieties of the disease, with pure insanity at the one end, and epilepsy traceable to organic lesion at the other; while between them lie hysteria, delirium tremens, and the most chronic forms of alcoholism now alluded to.

CASE CC.—A foolish physician recommended Mrs. R. H— to take small doses of sherry or brandy and water whenever she felt a “sinking at the chest,” or was in bad spirits. She is the wife of a country gentleman, idle, surrounded by prosperity and an attached family, and her age is 47. It is almost needless to say that she was constantly finding herself in bad spirits and flying to the delusive relief recommended to her. During the autumn of 1869 she began to feel a terror of being alone; had an idea that something horrible, she knew not what, had happened, or was going to happen. Then strange knowledges and revelations seemed borne in upon her. There were rappings all round the walls of the room; and as her impressions took a more definite shape, she felt convinced that they were either elective telegraphs or Jesuits. As she grew worse, first in the morning and then at various times of day, vomiting occurred. When she was brought to me in London about the middle of October, she could not keep a single meal on her stomach, and manifested a most alarming tendency to refuse food. I at once cut off all supply of alcohol, and ordered a cup of beef-tea every two hours. A period of depression followed, tremblings, sudden sweats, and a temporary increase in the vividness and frequency of the visionary foes. It was necessary to

administer a good deal of henbane and quinine, under the use of which she gradually got well enough to go home in three weeks. She was then able to keep down cold meat, biscuits, and any amount of soup. But hot meat continued to excite nausea. I tried the action of oxide of zinc, of morphia, and of hydrocyanic acid upon the vomiting, but neither of them did it so much good as henbane and quinine. I have received a promise from the patient and her husband that no alcohol shall be taken for six months, after which we are to make a fresh contract.

It may be mentioned that one morning, during her depression, she had an hysteric fit, which had never happened before in her life.

I watched the vomiting of solid food in this case. Directly it was received into the oesophagus, there was a heaving, and the morsel was rejected without much strain before ever it had reached the stomach. Fluids went down easily, and if thrown up it was after twenty minutes or so, and with more effort. As power of will returned, its vigorous exertion could sometimes check an impending sickness.

With regard to treatment the chief moot point is the complete abstraction of alcohol. I am sure it is the right course in all but most exceptional cases.

Care must be taken to distinguish from this class of cases those in which from some mechanical impediment or lesion the food cannot be swallowed, such as that cited in illustration of another part of the subject at page 188, or the following, where the result being happier, more doubts might have been expressed as to the diagnosis.

CASE CCI.¹—A respectable cabman's wife, Ann A—, aged 32, was admitted to St. Mary's July 22d, 1853. She was exceedingly emaciated, weak, anæmic, and had a loud murmur, probably from anæmia, with the first sound of the heart. For a month she had been obliged to reject her victuals after chewing them, from inability to pass them further than the back of the throat. They seemed to stick at the level of the os hyoides. From this point a pain ran to the back of the neck, between the shoulders. Quite at the posterior part of the fauces the mucous membrane looked redder than elsewhere, and was redder still lower down.

She was ordered rations of beef-tea and milk, and the following electuary:—

R.—Bismuthi trisnitratis ʒj,
Sacchari facis ʒiiss.

Fiat electuarium quotidianum, ejus lambat panxillum subinde.

¹ Case CCVI. in 2d edition.

When able to swallow better, she had some bark and a blister on the throat. She lost the pain, was able to swallow, and left much relieved on August 7th.

It will be seen here that the food is not swallowed at all, and there is no emetic effort. It is simply rejected.

Observe again the good effects of bismuth alluded to under CASE CL.

Cases CXCIV., CXCV., CXCVI., and others suggest as an interesting subject of inquiry, how long life could be sustained by absorption from the rectum alone, without the use of the stomach. If under this treatment starvation does not occur in ten days, one does not see why it should occur at all. Yet as a matter of fact we cannot thus indefinitely prolong life in cases where the stomach is rendered useless by cancer or other organic lesion. What are the causes of the failure, and what are the limits to the usefulness of the treatment?

One very important matter to attend to is to prevent the patient exhausting his strength by any bodily exertion. In the case next related, that would seem to have been the cause of failure.

CASE CCII.—In June, 1868, Mr. David S—, aged 60, a surgeon, placed himself under my care. A difficulty in swallowing had been gradually coming on for a year or more, but had, within the last few days before I saw him, increased so much that no food could be got into the stomach at all. It was retained in the œsophagus for half an hour or so, and then regurgitated in an alkaline condition, and only more or less macerated. His mode of gulping seemed to show this to arise from a paralyzed and dilated condition of the tube. He was exceedingly emaciated, and had a bed-sore on the sacrum. Like many medical men, he was sceptical of treatment, and objected much to means being adopted for making a more accurate diagnosis of his case. He had given up all wish for life, and had sent for me only to please a brother. With great trouble he was persuaded to have enemata every two or three hours of beef-tea, cod oil, and opium, and to make no attempt at swallowing. He not only was retained in life by this means, but actually got up and came into the drawing-room to receive me several days in August. And he took daily a small quantity of milk by the mouth. In September I went out of England for the holidays, and then Mr. S. thought he would go too, and bustled about, packed up, and drove to stay with some friends at Blackheath. After the journey he felt quite prostrate, went to bed, and died the next morning.

The expenditure of mental force is to be avoided equally with the expenditure of bodily. It may counteract treatment which

might, under other circumstances, reasonably have been expected to be successful.

CASE CCIII.—A young woman who had been deserted by her lover came under my care at St. Mary's in 1857. She had had violent hysterics, and an utter inability to keep anything on her stomach for some days already; the pulse failed, and the tongue was dry and brown. An attempt was made to restore life by means of nutritive enemata, but in vain. At the post-mortem examination every organ was in a completely normal state, and the catamenia were still flowing from the uterus. She had died of inanition only. The nutritive enemata were proved right, however disappointing the result was.

Vomiting the food first taken seems sometimes to arise from simple nausea consequent on taking food with repugnance, and is then curable by remedies which awaken a natural appetite. For instance :—

CASE CCIV.¹—Amelia D—, aged 20, was admitted to St. Mary's June 19th, 1857. On admission her general condition was as follows: *Stature* small; *weight* 84½ lbs.; *complexion* fair; *skin* healthy; *pulse* 92, even, feeble; *tongue* clean, flabby; *bowels* daily; *urine* normal; *catamenia* monthly.

She was well fed, and not overworked; but her employment necessarily confined her a good deal to the house. The thorax was healthy, though she told a tale of having had cough and hæmoptysis.

She complained of pain in the left side, and sickness in the morning, especially after breakfast. Her appetite was very bad, and the sight of food made her gorge rise at it; but still she forced herself to eat.

She was at first dieted on milk guarded with lime-water, rice pudding and ice, and took a grain of opium every night.

But after five days she was no better, so the opium was left off, and ten grains of Boudault's pepsin powder three times a day substituted for it.

In three days her appetite had returned, the vomiting and nausea had ceased, and she spontaneously asked for meat. She continued taking that with relish and without vomiting.

It would be easy to cite cases where drugs had effected the same purpose, but I chose rather to select an instance of the simplest form of restorative treatment (namely, the direct replacement of a deficient digestive solvent, so as to aid formative nutrition²), in order to direct the reader's thoughts to the true theory of healing.

¹ Case CCXXII. in 2d edition.

² See "Lectures chiefly Clinical," 2d Introductory Lecture, "Disease and Cure."

The same expedient is in some degree successful, even when there is a probability, from the symptoms, of some tissue-change having taken place in the stomach.

CASE CCV.—Mr. Howell, of Wandsworth, brought to me on the 2d of April, 1868, a young man of 21, who for two years had been afflicted, at intervals of a few weeks, with attacks of vomiting. They first came on when he was at school at Geneva. They were preceded by giddiness and by swimming in the head, sometimes so severe as to cause him to fall. The food is thrown off unchanged, sometimes immediately after a meal, sometimes after an interval of two hours. These symptoms usually go on for a fortnight or three weeks. There is no blood, and no signs of fermentative action even in the vomit. His appetite is usually good, and all the secretions were described as uniformly natural. On examination of the abdomen at the time of one of these attacks, when he was brought before me, there was pain on moderate pressure, in a circumscribed spot midway between the ensiform cartilage and the navel, and discomfort of a more diffused character between that spot and the right hypochondrium, but not elsewhere. In every other respect he seemed quite healthy.

He was advised to take 15 grains of Boudault's pepsin three times daily with animal food.

The vomiting ceased, and he felt quite well till the 16th, when at a ball he suddenly felt giddy, went out into the square and vomited his dinner. He retched all the way home. On this the pain returned, so that when I saw him he could not bear the epigastrium to be touched.

I advised the application of a couple of leeches and a persistence in the use of pepsin.

On the 30th of April he called to report that the leeches had immediately removed the pain, and he continued quite well.

The use of opium in curing vomiting is most marked in cases where there is an organic lesion as the cause of disease. While it palliates the effects of the lesion, by interposing an anæsthetic shield between it and the nerves, it cures the vomiting.

CASE CCVI.¹—B—'s Anonyma, aged about 25, was placed under my care in March, 1861. She had a large vomica in the upper lobe of the left lung, and the greater part of the lower lobe impervious with tubercles; but she had suffered very little from pulmonary symptoms, would not hear of being in a consumption, and talked about going to dances in a low dress as soon as she could get about again. But she was utterly prostrated to her bed by the constant vomiting of all she ate, and retching when she ate nothing. The bowels were obstinately costive, and she had taken as much as 12 grains of extract of colocynt without effect.

I gave her opium, beginning with a grain and augmenting it to six

¹ Case CCXII. in 2d edition.

grains daily. Then the vomiting ceased, and she recovered her appetite and fondness for luxurious living. She ate twelve shillings worth of strawberries (in April) daily, and an immeasurable quantity of brown bread &c. Her bowels recovered their functions, and she passed naturally colored and formed stools in spite of the opium. She slept naturally and easily without excess or stupor.

She died in the summer, but was able to keep off her vomiting to the last by the help of the opium. I think, however, she increased the dose. So that her ending was made much more easy, and probably postponed by it.

The next case is also an instance of an anæsthetic being useful in spite of the lesion which originally excites vomiting being irremediable.

CASE CCVII.¹—Ann F—, aged 52, married, was admitted under me at St. Mary's March 11th, 1853, complaining of a general throbbing, faintness, and what are recorded in the book as general "dyspeptic symptoms," of which the most marked were vomiting and tightness across the chest.

On auscultatory examination, the ribs were found rounded and immovable, and the cardiac region overlapped by emphysematous lung, so as to be, with all the rest of the chest, unnaturally resonant.

Hydrocyanic acid and chloroform relieved the dyspeptic symptoms. The remainder of the history has no bearing on my present subject.

Sea-sickness.—The primary cause of the vomiting produced in unaccustomed persons by the motion of a ship or carriage, by swinging, waltzing, and the like, I believe to be the relaxation of the œsophageal sphincter by the vibration. The body being at rest, or rotated on itself, and the œsophagus hanging somewhat loose in it, the jar is strongly felt, and the involuntary plexus supplying these muscular fibres is temporarily paralyzed by it. In fact, a succession of small strokes produces the same effect in unaccustomed nerves as one single severe concussion.

In both cases use begets hardness: those who are exposed to much knocking about—wrestlers, prize-fighters, huntsmen, &c.—will get to stand blows that would once have stunned them; and the jar and swinging of the gullet and stomach in time ceases to be followed by relaxation of the sphincter. And some persons and animals, from a peculiar structure (I will not call it a malformation) of the parts, never experience sea-sickness at all.

The earliest notice one has of this œsophageal palsy is faintness or giddiness, which in a healthy and normally sensitive person

¹ Case CCXV. in 2d edition.

always precedes sickness, whether arising from the poisoning of those nerves by an emetic, from blows on the stomach or head, or from swinging motions.

The relaxation of sphincters is always followed by the expulsion of the contents of hollow organs. Directly the anus is opened, the abdominal muscles act in forcing out the feces. So also with the bladder. And immediately after the relaxation of the œsophageal fibres, the diaphragm and its colleagues energetically press upon and empty the stomach.

Even after it is emptied, they continue to be spasmodically contracted, and the unhappy landsman lies retching and roaring, with nothing to throw up except a little bile, which the squeezing has forced backwards through the pylorus. This is the worst part of the ailment, just as cramp of a stump or of a limb lying loose is more painful than when the muscles have some resistance to act upon.

Women, whose nervous systems are the weaker, are more liable to sea-sickness than men.

Exposure to cold, either local or general, makes sea-sickness worse, by lowering the vitality of the nervous tissues—partially numbing them, in fact. Artless landsmen often aggravate their misfortunes by remaining on the wet, chilly deck in blustering weather; while the more experienced sufferers have avoided a great deal by immediately going below and getting warm and comfortable before the nauseating stinks begin to be rife, or by sitting with the back leaned against the funnel, when they cannot get below.

There cannot be a doubt that the most frequent cause of sea-sickness is mental—the association of ideas. We have been sick once among the “shapes and shrieks and signs unholy” of a steamer, and no sooner do we come across them again than our gorge rises. Even thinking of them upsets some people. On the other hand, the effects of strong emotion in bracing us up against sea-sickness is very remarkable, and associates its pathology closely with that of other functional paralyses. This is said to be observed in a striking manner in shipwrecks, when fright renders every soul alert, though before there was any danger they had been exclaiming that they recked not what became of them. Of that I have no experience; but I remember once lying prostrate with nausea in a *Penninsular* steamer, when the captain, knowing I was a doctor,

begged me to come and attend to an engineer who had got rolled into the machinery by the heavy swell. Only one finger was crushed, but the binding up that and the encouragement of the frightened man quite cured me, though to an unapt surgeon the mixture of blood, grease, and coal-dust entailed by a machinery accident, is not agreeable.

Alcoholic and ethereal stimulants, such as the "soda and B" of Channel steamers, or chloroform, act as a slight anæsthetic, and produce comfort in some persons for a short time; but the reaction afterwards is very bad. Carbonic acid, as in champagne or bottled porter, is more effectually sedative. But in some they appear to cause sickness by the association of ideas.

Almost always the inconveniences of sea-sickness in a previously healthy person cease with the cause: landing or smooth water sets all to rights. But sometimes, as in the following case, there is illness afterwards.

CASE CCVIII.¹—S. S—, a middle-aged gentleman in fair health, accustomed to suffer in rough weather, went for a day's trip from Sorrento to Capri in an open boat. There was a good deal of wind both going and coming; but, contrary to his custom, he was not sick. He remained well that night; but on the morrow he was attacked with spasmodic pain in the right side of the epigastrium, so that I almost thought he must be passing a gall-stone; but the bowels were opened naturally with formed feces of normal coloring. The pulse was also unaffected. He made himself vomit with warm water and putting his finger down the throat, and brought up unaltered food which he had eaten the day before. This vomiting was of no immediate relief, but it established the diagnosis of stomach-ache *vice* gall-stones.

The pain spread over the epigastrium, and as it spread became less, and gradually ceased the next night, helped probably by hot fomentations, which were used. But a certain soreness remained for a couple of days more.

I fancy in this case the paralysis had affected the muscular fibres of the stomach more than those of the œsophagus, and so a morbid condition was engendered, described in a former chapter as spasmodic pain of the epigastrium, or stomach-ache.² The gastric glands were also paralyzed; so the food was undigested, and not being of a fermenting nature, was unaltered.

Sometimes sea-sickness passes into a condition of chronic vomiting.

¹ Case CCXXIII. in 2d edition.

See page 150.

CASE CCIX.¹—Eliza W—, a young single woman, was quite well till the beginning of October, when she came up by a Hull steamer to London during the equinoctial gales. She was violently sick on the voyage, and fancied she twisted something inside her. On landing the sickness did not cease, but continued till her admission to St. Mary's, November 14th, 1863. She had also got very hysterical, and said that one day she was quite paralyzed. Her tongue was very foul, her pulse natural, her bowels constipated, the urine painful to pass. Her right eye also became painful, and she could not raise the lid.

Under quinine and a chloroform poultice she got much better by the 26th of November. Then, on its being found that the pupil of the painful eye was dilated, and the internal *rectus oculi* paralyzed, it was thought right to leech her temples.

On the 17th of December she was attacked with vomiting again, and on the possibility that the brain was inflamed the head was shaved and blistered, and iodide of potassium given. Apparent relief followed, but the patient got very hysterical. Finally the vomiting was stopped with valerian, but not till the end of February.

I have never heard of such a thing as chronic vomiting arising from sea-sickness in a man; and I suspect that the pathological interpretation is the passing of the temporary morbid condition into that chronic state which was described in a previous part of this section as related to hysteria.

I should presume shower-baths and valerian would be the best cures; but I have not the authority of experience, as the contingency is exceptional.

The vomiting of pregnant women has a pathology very much the same as sea-sickness. It arises from a mechanical disturbance of the position of the stomach and œsophagus. By the commencing enlargement of the lower organs, these viscera are raised, lifted off their feet as it were, and so made unsteady. When the womb rises higher still, it is so big it compresses them and steadies them again; and besides the stomach gets habituated to its circumstances; and so the sickness ceases in the latter months with some women. Like sea-sickness, this vomiting is sometimes at first a little relieved, but in the end always aggravated, by alcohol. Temperance in that indulgence, and also in eating, prevents it better than any drugs.

CASE CCX.—Mrs. H. G—, the mother of five or six children, consulted me when about two months pregnant with her last, concerning a temporary angina she had caught. She then told me that in all

¹ Case CCXXIV. in 2d edition.

her pregnancies she suffered excessively from vomiting, often during the whole period, and to such an extent as to prevent her going into society at all, or managing her household. I advised her, instead of being "kept up" with tonics and meat and wine, as on former occasions, to abstain entirely from alcohol and tea, and to live mainly on milk and water and biscuit, with a small piece of meat once a day. By this expedient she entirely avoided the sickness, and was so pleased with her diet that, by merely increasing the quantity of nutrients, she continued it during suckling, and declared she had never been such a good nurse before.

The great difficulty one has in persuading pregnant women to adopt rational treatment arises from a false notion prevailing among even medical men as to the pathological position of pregnancy. It is looked upon as a time of weakness; and mechanically speaking, no doubt it is so—a woman cannot get about so well with a burden placed in an awkward situation. But physiologically it is a time of strength. Never are the organic processes of life so active, the principles of growth so predominant. This is shown by the healing of sores, the arrest of tubercle, and the general resistance to disease presented by the body at that time, and, indeed, might have been inferred from a thoughtful view of the physiology of reproduction.

To sum up, I would deduce the typical examples which I have cited:—

1st. That the chronic vomiting of matters swallowed unchanged immediately after swallowing is most common in women.

2d. That it is now more a mental, now more a bodily affection; now more under the patient's control, now less.

3d. That the efficient employment of drugs being in a manner barred by their rapid ejection, other means are more imperatively called for in this disease than in most others.

4th. That the weakening of the patient's will being the marked feature of this morbid constitution, the strengthening of the will is the best antidote.

5th. Rational persuasion is available in some few, extremely voluntary, cases.

6th. In chronic cases the renewal of the will and bracing of the muscles by cold shower-baths is valuable. In the same way ice is useful when swallowed in the vomiting of fevers and of cholera. (Cases are not inserted here as being too diverse from those which are the main objects of the volume.)

7th. The most important part of the treatment is physiological rest. To the stomach it may be given by substituting liquid for solid food, and if that is not sufficient, by feeding through the rectum; but with that measure must be joined complete repose of mind and body, or fatal exhaustion ensues. The food soonest borne is milk and lime-water, then clear beef-tea or gravy soup, and so may be mounted the ladder of diet sketched at page 101. All food should be begun in teaspoonfuls.

8th. Restoration of the natural appetite, and so a removal of the nausea consequent on its loss is important; as is shown by the action of artificial pepsin without drugs.

9th. Anæsthetics, as typified by opium, henbane, hydrocyanic acid, are useful, as shown by their acting beneficially even when the cause of the vomiting is irremovable.

10th. Where there is fermentation, hyposulphite of soda and carbolic acid may be expected to be of service.

11th. Alcoholic stimulants, though they make the patient feel more comfortable for a time, are likely to be followed by more painful reaction afterwards. They can be spared even in the vomiting of delirium tremens.

CHAPTER VI.

FLATULENCE.

SECTION 1.—General Remarks. SECTION 2.—Eructation. SECTION 3.—Intestinal flatulence. SECTION 4.—Colonic flatulence.—SECTION 5.—Treatment of the several sorts.

SECTION I.

General Remarks.

WHEN flatulence is spoken of we must not reckon all the air contained in the intestinal canal as morbid: we are not, like old-fashioned nurses, to look upon “wind” as an evil in itself. A certain amount of oxygen is wanted to aid in the acidification which is necessary to digestion; and as this oxygen is derived only from the atmospheric air, it implies the presence of still more nitrogen. Another important gas is carbonic acid; it is a sedative to mucous membranes; it is the natural atmosphere of all internal parts; they become irritated and inflamed if they are deprived of it, and growth in wounds and normal secretion on lining surfaces go on naturally only when thus defended against external influences. Again, carbonic acid is an important agent, indeed it may be called a great moving agent, in the digestion and circulation through the body of aliments needful to growth. For there are several elements of nutrition, such, for instance, as the carbonate of lime and phosphate of lime, wanted for the bones and nerves, which are insoluble in water, but are soluble in water saturated with carbonic acid. This saturation is effected by the gas which remains in the bowels, as a reservoir—as a reservoir, too, where a certain amount of compression is exerted, and the taking up of the carbonic acid is assisted just as in natural springs or in artificial fixed-air machines. This use of the air in the alimentary canal is really a most important one.

For the nitrogen I do not know how to find a use in the nutrition or modification of the tissues. Some of it is probably taken up by the blood, and excreted by the lungs, as in the expired air a con-

siderable proportion of this gas is known to be found, forming, according to the latest experiments of M. Barral, one per cent. of the whole, and some may perhaps be made into ammonia. But to that which remains still in the alimentary canal an employment may be assigned, humble, indeed, yet contributing most exceedingly to our comfort and health. The feces when they arrive at the ilio-cæcal valve are almost fluid, and are so largely mixed with water saturated by salts, that they are of greater specific gravity than ordinary water, and either sink in or become mingled with it. If now our digestive organs are not performing their duty well, or pass the mass on too quickly, it comes into the external air in a very similar state to that above described. It is a heavy, unformed, half-liquid pulp, diffusing itself inconveniently; but if partially dried by the gas present, and lightened by the admixture, it is much less offensive to the senses, and easier retained by the sphincter ani.

It is only then when in excess that I would speak of air in the alimentary canal as "flatulence."

SECTION II.

Eructation.

In approaching the subject of eructation it must be remarked that gaseous contents of the hollow viscera are differently circumstanced from liquids and solids; their high degree of expansibility by heat and their low specific gravity give them an inherent force which urges them outwards without any aid from the muscular system. Other contents of the stomach require the action of the expiratory muscles to expel them, whereas gas warmed by the body tends to rise through the œsophagus directly that tube is relaxed.

The essential condition is the relaxed and open state of the cardiac end of the gullet. The air, instead of being retained by the contraction of this powerful sphincter, finds its way upwards in greater or less quantity. The passage of the bubble towards the mouth, except in completely paralytic patients, causes a reaction, and by the time it gets to the fauces it is compressed by the stimulated muscles, and is suddenly expelled. Hence the noise is greater than is caused by the mere bubbling of air up the throat, such as you produce in moving a dead body, or an apoplectic patient.

There is a combination of relaxation with spasm, the former taking the initiative.

The relaxation is by no means so complete as in vomiting. The bubble of air is allowed to pass, and then the œsophagus contracts again immediately.

The following table exhibits a comparison of several analyses of the air found in different parts of the healthy human intestinal canal:—

	IN STOMACH. Volume per cent.	IN ILIA. Volume per cent.	IN COLON. Volume per cent.
Carbonic acid .	{ 14 (Chevreul) 25.2-27.8 (Chevillot)	24.39 (Chevreul)	{ 43.5-70 (Chevreul) 23.11-93 (Chevillot)
Oxygen . . .	{ 11 (Chevreul) 8.2-13.0 (Chevillot)	0 (Chevreul) 2-3 (Chevillot)	{ 0 (Chevreul) 2-3 (Chevillot)
Nitrogen . .	{ 71.45 (Chevreul) 66.8-59.2 (Chevillot)	20.08 (Chevreul)	{ 18.40-51.03 (Chevreul) 95.2-90.0 (Chevillot)
Hydrogen . .	{ 3.55 (Chevreul) a trace (Chevillot)	55.53 (Chevreul)	
Sulphuretted hydrogen . .			1.0 (Marchand)
Carburetted hydrogen . .			{ 5.47-11.6 (Chevreul) 28.0 (Chevillot)

With regard to the gaseous contents of the stomach, as exhibited above, it may be observed readily that more than four-fifths is atmospheric air, and the rest is carbonic acid in much less proportion than in the breath which is passing out of the trachea by expiration, and which constitutes the air of the mouth and saliva. This fact gives us a strong hint of its source. It is evidently in a healthy person swallowed with the food and frothy saliva in such quantities as to fill the organ up to the points of normal distension.

In the majority of cases also, where the collection and evacuation of air from the stomach is so abundant and inconvenient as to be considered a disease, you may trace out the same source of it. Observe paroxysms of sobbing, globus hystericus, epilepsy, or chorea, and you will see great quantities gulped down. Watch those who are suffering from heartburn, and you will see them swallow air or frothy saliva, as if to relieve their discomfort.

Other persons have a careless habit of eating with the mouth open, which makes them swallow a quantity of air. Others have a trick of half-unconsciously gulping it down—and a very silly aspect it gives them, something like that of a gobbling turkey-cock.

I fancy the sensation leading them to it must be something¹ like that which make horses crib-bite—a sort of modified heartburn; but it is more trick than anything else.

In health all the air swallowed is readily absorbed. There are many individuals who never pass it away, upwards or downwards, for months together; indeed, so long as the perfect type of health is preserved, it may be said to be never excreted. After a meal their abdomen is as usual distended with air, but it is all removed by absorption before the next.

In many morbid conditions this is not done. When the vitality is lowered, probably the function most generally interfered with is absorption. The air collects, is swelled by heat, and expelled, although in no excessive quantity. Should the œsophagus be easily relaxed, there is eructation; should it be contracted, there is intestinal flatulence.

So far, the bulk of air swallowed has been supposed to be increased only by heat and expansion. But in some cases it is further augmented by gases disengaged from decomposed food. The occurrence of alcoholic fermentation in the digestive canal is proved by instances of vomiting, in which the matters ejected are visibly undergoing this chemical change. They are frothy with carbonic acid like yeasty beer, and they continue frothing up even when left to stand after ejection. (See Cases CLXXXI., CLXXXII., CLXXXIII., CLXXXIV.) Seeing how it behaves in the laboratory, one may easily imagine what a disturbance in the stomach this must make, and need not be surprised at the ejection of such a turbulent guest.

Fortunately this spread of alcoholic fermentation through the saccharine contents of the stomach is rare. Its features are so marked, and the discomfort it causes so great, that we should be sure to hear more about it were it common. The fact is, that even where it begins and gives rise to the disengagement of some carbonic acid, it is rapidly stopped by the conversion of the sugar into lactic acid, a kind of fermentation more congenial to the temperature of the body. So that the "acidity," which in a former chapter has been spoken about as an evil, is a defence against one much more serious.

It will be seen from what has gone before that I class the cases of eructation which come before us into three groups:—

1. Those where there is simply a relaxed œsophagus, and the air, though only in natural quantity, breaks upwards.

2. Where there is an excess of atmospheric air swallowed from habit, or in the attempt to relieve an uncomfortable feeling arising either from the stomach itself, or some of the neighboring viscera, as the heart, for instance.

3. Where carbonic acid is formed by alcoholic fermentation, unchecked by acetification.

This grouping has a bearing mainly on treatment, and a reference to the cases recorded will show readily to which class they belong.

By the majority of patients it is the escape of air from the stomach that is complained of; but sometimes the retention of it causes considerable inconvenience. It may (especially when combined with old age or diseased heart) collect in such quantities as to cause a paralysis of the muscular coat of the stomach, and put the patient in considerable danger by impeding the action of the heart and diaphragm, and causing deadly faintness. I use the epithet "deadly" from recollection of the following case:—

CASE CCXI.¹—As physician to the Chelsea Dispensary, I attended occasionally for shortness of breath a fat single woman of from 45 to 50 years of age. She complained of eructations, and of the upper part of the belly being swollen with wind, which I attributed to over-fat diet and sluggish habits. One day they sent for me suddenly to say she was dying, and when I got to the house she was dead. On a post-mortem examination, the heart was indeed slightly dilated and perhaps pale, but appeared more equal to work than the majority of hearts we see. But it was really quite difficult to get it out of the chest, so pressed up was the diaphragm by the stomach enormously distended by its gaseous contents, devoid of smell, and certainly not, therefore, the product of post-mortal decomposition. This distension seemed to have been the cause of death.

More generally matters do not go quite so far as that.

CASE CCXII.²—Mr. James L—, a hale-looking man of 63, came for my opinion at the beginning of March, 1867, about excessive dyspnœa by day and orthopnœa by night, with which he suffered. Sponges and other instruments had been put down the throat (? into the larynx) without any benefit. On examination of the pulse, this want of success was readily explained by an excessive irregularity

¹ Case CCXXV. in 2d edition.

² Case CCXXVI. in 2d edition.

and intermittence. The heart was also irregular, but not so intermittent as the pulse. The sounds were normal, but diffused.

As the urine was also albuminous, I gave an unfavorable prognosis.

But, to my surprise, a few days' dosing with strychnine, digitalis, and iron reduced the action of the heart to regularity, and so far relieved the dyspnœa, that the patient was able to take exercise with ease. He said he had broken off wind from the stomach in several great bursts, and that new relief had followed each explosion. It was necessary to modify my prognosis. In three weeks' time he was really as hearty and well as any one can be at sixty-three.

This sudden relief of the stomach by paroxysmal explosions is exemplified in a former case, also an elderly man, where the cure of a long-continued water-brash followed thereon (Case CIII.).

The pathology of such cases seems to be that there is a paralysis of the gastric walls; air is drawn into the dilating organ, swells from heat, further dilates it and increases the paralysis, till such time as the sudden contraction of the circular fibres is brought about by nature or art, and then all is expelled at once, sounding the triumphal note of cure rather than being its cause.

It is, however, in the flatulence of dyspeptic hysteria that the explosions are most remarkable; they occur again and again, and are graphically described in Case CCXCIII. as "roaring eructations." When they are repeated so quickly as this, the air can of course be collected only by being swallowed.

The pathological etiology of eructating flatulence is to be sought in causes which lower the local vital force of the gastric involuntary nerves, and so make the muscular action intermittent and irregular. Such, for example, is starvation in Cases XIX., XXI., LXXXVI., &c., the pressure of the last in the shoemaker, Case CCCXLVI., excess of tea-drinking in Case CCXCIII., extraordinary fatigue in Cases V., VI., VII., XXIII., &c.

The following case exhibits the mildest form and most common time of occurrence of gastric flatus.

CASE CCXCIII.—Mr. F. F., aged 48, came to me November 16th, 1867, after he had been ill months with an inconvenient flushing of the face and eructation of wind from the stomach, coming on an hour after meals. It was often preceded by a tightness across the sternum. The action of the bowels was natural, and no other abnormal symptoms appeared, except an occasional sweet taste in the mouth.

He was a merchant actively engaged in trade, and attributed his ailment to over-anxiety to business during the spring and summer.

I prescribed him quinine and strychnine.

The next two patients illustrate an occasional cause of gastric flatulence occurring about two hours after meals, namely, imperfect action of the hepatic function.

CASE CCXIV.—Robert T—, aged 59, retired fifteen years from E. I. Civil Service, suffered when in the East from dysentery, fever, and “chronic liver obstruction.” He came to me May 15th, 1867, about a fetid discharge from the antrum of Highmore, but having heard his history, I questioned him about his digestive organs.

Since his return to England he has had jaundice, and then his stools are light-colored, but are not so habitually, though his bowels are costive. His principal indigestive discomfort consists of explosions of wind from the stomach two hours after eating.

Wishing to give him ehlorate of potassa for his antral discharge, I ordered it in a draught of quinine and strychnine, and on subsequent visits he said he thought his digestion was thereby benefited.

CASE CCXV.—Major E—, getting on for 70 years of age, has served abroad in his youth and had fever. He has frequent attacks of spasmodic pain in the right hypochondrium about two hours after food, accompanied by eructation. When these are at their worst he sometimes grows yellow, but he never passed any gall-stones, nor has he ever had a regular attack of jaundice. There is some tenderness on pressure over the whole epigastrium. (August 25th, 1858.)

There is sometimes an alternation of stomach and intestinal flatulence. This would seem somewhat to depend on the position of the body, for with the horizontal posture the flatus accumulates in the ilia, while, after rising, the place of collection would seem to be the stomach.

CASE CCXVI.—Miss R—, aged 51, has been a healthy woman all her life till three years ago, when her catamenial periods began to grow irregular. At the same time she had headaches, numbness of the hands and arms, and an unusual feeling of weariness after exertion. She is a large-framed, vigorous-minded person, of active habits, and had a great dislike to “giving way,” as she calls lying down in the daytime, or resting more than other people. For the last year her most annoying complaint has been flatulence. In the morning before rising the wind rolls about in the intestines, distends the cæcum and colon, and often breaks away *per anum*. In the daytime it mostly collects in the stomach, and breaks off in eructations. Her epigastrium, as I examined her to-day, is distended like a bladder, and is tympanitic on percussion, the sound elicited being of a higher note than that of the cæcum. My examination caused eructations to follow in about five minutes.

The bowels are somewhat costive, the catamenia not yet quite ceased. She has much pain in the loins.

Prescribed ten grains of Bromide of ammonium, and $\frac{1}{32}$ of a grain of strychnine in a draught of decoction of bark twice a day, a pill of alôes, myrrh, and strychnine every night, warm douches to the back, and an abdominal belt.

SECTION III.

Intestinal flatulence.

A reference to the short table given in the second section will show that in the gaseous contents of the ilia there is an increase in the quantity of carbonic acid relatively to the oxygen, or, if we like so to regard it, a decrease of the latter. At the same time hydrogen, scarcely present in the stomach, forms a good half of their bulk. This hydrogen cannot be swallowed air, and is not likely to be excreted from the blood: for we do not know of any gas besides carbonic acid owing its origin to any important amount from the circulating fluid. It must, I conceive, arise from the chemical changes going on in the remains of the food. I do not think any large quantity of air passes the pylorus, but that the bulk of the gas in the ilia comes from decomposition of their contents.

In a state of health this gas is reabsorbed nearly as soon as formed, so that only for a short time after meals is the abdomen puffy; but, as I explained before, lowered vitality promotes the collection of air by arresting absorption.

Lowered vitality also increases the extent of decomposition, by diminishing the flow of bile. The action of this secretion on food is exhibited in the experiments made by MM. Bidder and Schmidt upon dogs.¹ They found that when the flow of the bile into the intestine was cut off by tying the ductus communis choledochus, rapid chemical changes took place in all sorts of food. When the animals were fed on flesh, the feces smelt like carrion; there was a continual rumbling of the abdomen and an evacuation of fetid air. When they were fed on bread only, odorless gases and sour feces were passed. No further injury beyond emaciation and weakness followed during the eight weeks of the experiments. From them we have a right to infer that one of the chief functions of the bile is to act on albuminous matters as an antiseptic, preventing their putrid decomposition, and preserving them safely to be exposed as much as possible to the absorbents of the alimentary canal; and that at the same time the excessive formation of acid from vegetables is checked, so that it may proceed gradually and as required by the digestive process. In fact, the condition produced in dogs

¹ Bidder and Schmidt, "Die Verdauungssäfte," p. 230.

by mechanically arresting the functions of the liver, answers exactly to the intestinal flatulence of dyspeptics in our species.

It may be observed that it is a long time after a meal, in fact just before the next meal, that the bile is normally poured in greatest quantities into the duodenum: in dogs in twelve or fourteen hours, in men about four or five. Now this is just the period when it is most wanted to prevent decay, and just the period when intestinal flatulence from its deficiency most usually occurs.

Excess of gas in the small intestines is the most troublesome sort of wind. Should it escape upwards through the pylorus into the stomach, it is apt to cause vomiting; or sometimes it constitutes a most nauseous eructation of sulphuretted hydrogen. Luckily this is rare. There seems to be some difficulty about the passage of air downwards through the ilio-cæcal valve. Hence intestinal flatus often rolls about in the abdomen from the changes in position which the motion outwards of the alimentary masses involve, and causes the well-known and distressing grumbings of the belly or "borborygmi," aptly called in English a "glug-glug." The abdomen will be distended for several days with it, without its being expelled or absorbed.

Its escape into the colon, even without making its way out of the body, gives immediate relief. (See CASE CCCLI.)

There is very often considerable pain in one side or the other, most generally the right hypochondrium. The patients, especially if they are old Indians, will say they have got "liver." Where there is most pain in the side there is least grumbling of the belly, so I suppose it must arise from the long-continued immovable distension of one part of the gut.

Flatus in the intestines is troublesome during the day, from the tumidity of the abdomen, and noise on motion, and pain in the sides; but when it comes at night it causes still more inconvenience by preventing sleep. It is hard to explain why this should be; in many cases there is not enough pain or discomfort to account for it, yet a complete wakefulness and apparent want of wish for sleep prevail. It is to be remarked, also, that this insomnia is in many instances made worse by opium. Sometimes the patient will go to sleep easily and naturally on first lying down, and will then wake up in an hour or two, finding the abdomen tumid and uncomfortable, and will remain entirely without rest for the remainder of the night; or if there be a lapse into unconsciousness

for a few minutes, the uneasy sleep seems rather to aggravate than to relieve the feverish restlessness, and to cause headache.

During this unnatural repose men are often annoyed with disgusting erotic dreams and abnormally frequent seminal emissions. I have never ascertained whether any analogous effect is produced in the female sex. The line of causation cannot at present be traced, the bowels and the generative organs appearing to have so little to do with one another.

The persons most liable to this troublesome affection are women, especially those of weak muscular fibre, anæmic diathesis, and a tendency to form fat. We may attribute it, under these circumstances, to a naturally sluggish portal circulation, which does not so quickly absorb the contained air as a freer current through the bloodvessels would do.

CASE CCXVII.¹—Mrs. R—, aged about 40, has been from time to time a patient of mine during the last six years, on account of increasing corpulence, inability to walk without violent perspirations or exhaustion, palpitation of heart and anæmic irregularity of catamenia. Last week (March, 1867) she came to town in considerable pain all over the abdomen, starting from under the right ribs. The abdomen was very large, and I thought at first she had been getting fat again; but she denied having increased in corpulence as to the other parts of her body lately. It was very tympanitic on percussion.

This swelling of the abdomen made her very short of breath, and at night she could hardly lie down, and was frequently woke up by discomfort.

The bowels were fidgety in their action; sometimes confined, but more usually open in small quantities several times daily. The feces were semi-fluid, light-colored, and very offensive. Flatus was not now passed *per anum* with them, though that escape was habitual in ordinary health.

The appetite was deficient, the tongue coated. The catamenia had been the last few periods rather more profuse than ordinary.

I am giving her valerian and strychnine to strengthen the peristaltic action, and a small dose nightly of aloës to augment temporarily the excretion of bile.

Remark here that when she was in health the gas escaped by the usual passage, but that in illness it was retained; and was retained immovably, as shown by the pain in the right side. The feces are just those of the dogs experimented upon by MM. Bidder and Schmidt. The sulphuretted hydrogen and hydrosul-

¹ Case CCXXVII. in 2d edition.

phate of ammonia formed by the decomposition of animal viands unguarded by bile seem to be purgative poisons, and where they are found the stools are semi-liquid.

The pain from intestinal flatus is sometimes felt in the back, especially at the lower part of one scapula or the other.

CASE CCXVIII.—Mrs. B— was sent to me by her medical man May 3d, 1866. She was 48 years of age, of a clear florid complexion, stout and portly. The occasion of her coming to me was a pain, much increased after walking, in the right popliteal space, which had lasted a year, and though never sharp, except the leg were strongly flexed, was yet gradually getting worse. The knee and the leg below were slightly swollen, but no impediment to the circulation was to be detected. Her husband declared it was gout, and was carrying her off to some continental spa, and I was called upon to say which was the most suitable.

I mention these details only to explain her coming under my care, for in truth I did not think she was diseased at all, attributing the pain to her gartering above the knee, which in persons of increasing stoutness causes considerable pressure on the part. My prescription, therefore, consisted in directing her to fasten up the stocking with a tape to the waist, as children do.

On June 8th, 1867, she came again (before I had done breakfast, proving herself an active, early riser), partly to tell me that the rearrangement of her stockings had been immediately successful, and partly to ask whether there was not now something the matter with her stays.

The last was a joke, for she did not really think that a pain which she had for some weeks felt in the shoulder was due to that article of dress. This pain occupied a space about the size of the palm of the hand, and was situated as if in the ribs covered by the lower part of the right scapula. It usually came on when she got up, continued till about five in the afternoon, and then went quite away. Pressure or thumping relieved it for an instant, but it returned as bad as ever. On inquiry I found that she was subject to nausea of a morning, weak appetite, and flatulence with deep-toned borborygmi. When any of these symptoms were specially marked, the stools were pale-colored. She also had had sometimes attacks of griping in the hypogastrium. These rollings, grumbings, and gripings had been somewhat less frequent since she had experienced the scapular pain, and certainly did not coincide with it in time of supervention. She had been treated with purgative medicine for several weeks without benefit.

I ordered her a grain and a half of quinine, with $\frac{1}{24}$ gr. of strychnine twice a day.

In looking over my printed cases for specimens of chronic conditions in which intestinal flatus was conspicuous, I find Bright's disease, Case XXXI.; old age, Case XI.; rachitis, Case XXXIX.

Immediate causes mentioned are—anxiety and application of mind, Cases XXIV., XXVI., CCCXIII.; loss of blood, Case LXXII.; over-eating, Cases CCLXVII., CCLXIX., CCLXXII.; irregularity, and other bad habits of meals, Case CCCIV., &c.

In many other similar cases recorded, where flatulence is spoken of, the intestinal form of it is intended.

Disease of the stomach seems as a rule to exclude intestinal flatus. Thus it may be observed to be conspicuous by its absence in the chapters on “Local pains” and “Vomiting.”

SECTION IV.

Colonic Flatulence.

Flatulence in the colon may be distinguished from that in the small intestines by its position ascertained by percussion, by the absence of rumbling (except a little bubbling through the ilio-cæcal valve just before it escapes), and by its passing out freely per anum.

A reference to the table on page 236 will show in the normal gaseous contents of this part of the bowels the presence of sulphuretted and carburetted hydrogen. But in health the quantity of the former is not enough to overcome the prevailing odor of feces. In some cases of disease the sulphuretted hydrogen, arising from the decomposition of albuminous matter unchecked by the normal flow of bile, is in excess, and may then be readily detected. In other cases scentless carburetted hydrogen and carbonic acid seem the prevailing gases. In the former there is albuminous, in the other starchy dyspepsia.

When much sulphuretted hydrogen is present, there may be a diarrhœa of feculent matter; but colonic flatulence is more commonly accompanied by costiveness and constipation. The colon does not appear to be so sensitive to poisons as the ilia.

It is intestinal wind that is generally complained of by patients who are bad enough to be driven to a doctor, and is that which is generally alluded to as “flatulence” in the cases in an earlier part of the volume.

Colonic flatulence is not nearly so distressing as intestinal, and does not cause so much wakefulness or other nervous disorders.

SECTION V.

Treatment of the several sorts of Flatulence.

Eruclation may in some cases be stayed by solely a direct restorative treatment of the cause. The defective digestion may be replaced by artificial gastric juice. For example:—

CASE CCXIX.¹—James B—, a laborer of 50, was taken in at St. Mary's April 20th, 1856, for a catarrhal cough of ten weeks' standing, with some congestion of the lower part of the lungs. The object of admitting him was to give his cough the benefit of the regulated temperature of the ward, with rest. No cough medicines were considered needful. But he complained that after meals he had throughout his illness been troubled with wind breaking up from the stomach. It was tasteless and inodorous.

Fifteen grains of Boudault's pepsin powder was administered daily with the dinner. On the 25th the flatulence was relieved, and he went out well on the 1st of May.

Variation of habitual postures, stimulant exercises, and even such mechanical expedients as an alteration of the dress and rubbing, will often give considerable relief, by bracing up the muscles to renewed action.

CASE CCXIXa.—Miss L. H—, a schoolmistress, aged 47, has suffered during several months every winter from weight after eating, followed by distension of the abdomen. She also has occasional attacks of vomiting, and twenty years ago vomited blood. But what causes her most inconvenience is stomachic flatulence. She finds that if she can get her dress off and have her back rubbed, the wind is expelled upwards in considerable quantities, and she is relieved. Riding on horseback also, when she can find time for it, is a great advantage to her. (*December 24th, 1867.*)

Where excess of air is swallowed from abnormal sensibility and breaks up in eruclations, valerian and ammonia are useful, but above all shower-baths. I do not know any disease in which their value is more marked. The more the patients can bear of them the better, and the sooner they can get educated to take them in full quantity and cold the better. First let them be administered tepid, then with shower cold and the foot-bath warmed with hot water, then make them all cold, and each day let the quantity of water be gradually increased till the full extent that the bath

¹ Case CCXXVIII. in 2d edition.

will hold be arrived at. Many examples of this mode of treatment have been already given.

When the eructations depend on the formation of carbonic acid by alcoholic fermentation, the hyposulphite of soda is indicated. See Case CLXXXIII., &c.

Eructation from this cause is rare without vomiting.

The aim of the treatment mentioned is to prevent decomposition of organic matters. In the laboratory we find that nothing is so powerful in this respect as sulphurous acid; and accordingly it is used in various processes of the arts for the purpose. Sulphur is burnt by wine-growers in casks used a second time to arrest the fermentation which is apt to be going on in the liquids soaked up by the cracks or porous parts of the staves, and the acid vapors effectually do their duty. The agents of the Board of Health find no disinfectant for sewers so quick and certain in its action as Macdougall's, the chief ingredient in which is sulphite of lime. Muscular tissue may be prepared on the same principle, and keeps as well as when salted or dried; and we may test even on such a delicate substance as yolk of egg how fresh it keeps with a sulphite salt. The same effect is produced by taking as a medicine hyposulphite of soda; the fermentation of the contents of the stomach is arrested, and the evil effects of that fermentation prevented.

But it must be remembered that the digestion of the meat is also checked. Dried, salted, or otherwise chemically prepared victuals are not so soluble as fresh; indeed, if completely dry they are not soluble at all; and to continue the hyposulphite of soda long would put the patient into the condition of a sailor reduced to salt junk.

A safer, but equally powerful arrester of chemical changes is charcoal. When soup has begun to turn in hot weather, economical cooks heat it up with a little bag of charcoal in it, and it becomes quite sweet. This shows that the carbon does something more than merely condense the gases formed. The same agent will accomplish the same result in the alimentary canal. I myself have used it truly only in cases where decomposition producing flatulence occurs in the intestines; but I should not hesitate to give it in gastric fermentation also, if hyposulphite of soda chanced to disagree or had failed in its effect.

The general treatment of indigestion by quinine and strychnine, as several times here advocated, is specially indicated in eructation, inasmuch as the most failing function is that of the contractile fibres of the œsophagus and stomach, and to these our remedy first arrives. An example of their rapid action may be read in Case CIII.

As stated on the last page, *intestinal flatulence* exhibits best the power of charcoal, because the air has more difficulty in being got rid of without some such help, and the air formed by decomposition is peculiarly copious and troublesome.

In ordinary cases there are usually joined several other remedies to the charcoal, such as quinine and strychnine (for the reason given a few sentences back), and soda and valerian, or galbanum, or assafoetida, so that the action of the carbon is complicated. I have therefore selected for the nonce, to exhibit its special and independent action, a rather out-of-the-way instance, in which the collection of air took place in consequence of a mechanical lesion entirely preventing its passage (for the small exit must have been always blocked up by feces), and in which the only antiseptic and absorbent used was charcoal.

CASE CCXX¹—Elizabeth C—, aged 63, was admitted to St. Mary's under my care January 15th, 1857. Though thin and not muscular, she had always been a hard-working, active woman, and had borne thirteen children, of whom but two were dead, one of phthisis and one of scarlatina. She herself could recollect no illness except scarlatina and child-bearing, till five months ago, when she noticed that the left side of the abdomen was often swelled, and that the swelling was relieved by a copious explosion of wind by the anus. A like swelling she also perceived some time afterwards on the right side, since which she had not so often been relieved by the passage of wind. She had also frequently a feeling of numbness and involuntary twitches in the legs.

She lay on her back, when I visited her, with the abdomen raised up by a great collection of air. It measured thirty-eight inches in circumference. No solid tumor could be felt. The bowels were very constipated, and under the influence of purgatives only a little fluid feculent matter, but no air, was passed.

An attempt was made to relieve her by passing a tube up the rectum, but no air was let off even thus. A many-tailed bandage was bound tightly round the belly, but no diminution in size followed. Turpentine, too, was administered, but it was fruitless.

¹ Case CCXXIX. in 2d edition.

On the 22d I ordered a drachm of charcoal to be given every other hour, the bandage being still kept on. On the 25th she was much better, the distension being much less. On the 27th it had increased somewhat, so I added $\frac{1}{2}$ of a grain of strychnia to the powders on those occasions daily. From that time we continued to find the abdomen softer, the patient lost her pain and gained strength, but with occasional relapses of distension.

On the 20th of February she was able to get up. Her bowels were regularly opened by a simple enema, with sometimes a few drops of cajeput oil. Her tongue was clean, and the general health was good, and in the beginning of March she was actually assisting in the work of the ward. She herself pronounced that she was well enough to return home, and arranged to do so on the 23d. However, early in the morning of that very day she suddenly died, the only warning of her being worse having been a certain relapse of distension on the 21st.

On post-mortem examination there was found in the lower part of the ileum, on the right side, an occlusion, as of a hard contracted scar, without any peritoneal adhesions. The occlusion, at first view, seemed quite complete; but on further manipulation a dissecting probe was passed through it by a winding passage. Above this the intestines were greatly distended with air and semi-fluid black feces. But what surprised us was the *entire absence of fetid odor* in all this matter so long retained. It was not nearly so unpleasant as that found in a corpse accidentally killed in full health.

This last observation is my reason for my citing here this somewhat long and painful case. If the charcoal can so act where a mechanical impediment confines the gases to the intestines as by a ligature, and half kills them by strangulation, it must be still more powerful when it is aided by the vital force still remaining only slightly arrested, as in ordinary cases. For, in truth, people may be very flatulent without being very ill.

Charcoal, being tasteless, is not disagreeable to take when you have got over the grittiness in the mouth. The only other objection I have had raised is its color. A wit of the Midland Circuit told me I was turning his "colon" into a "coal-hole."

Temporary advantage is gained in intestinal flatulence from the use of such expedients as restore the flow of bile in full quantity; a chief business of that secretion being the prevention of chemical decomposition in organic matters, and so a temporary use may be made of drugs for this purpose.

The salts of mercury (viz., the gray oxide and calomel) were found in some experiments made by Dr. Handfield Jones on animals to increase the production of yellow matter in the hepatic

cells. But when this metal was given there was also great sanguineous congestion of the liver, which, on the contrary, was pale after an administration of drugs which had not augmented the yellow matter.

Muriate of manganese and *colchicum* had also the like effect.

Nitro-muriatic acid during life caused a flow of bile *per anum* in a cat; but there was no excess of yellow matter in the hepatic cells *post-mortem*.

Aloes, *oil of turpentine*, and *rhubarb* acted much as nitro-muriatic acid.

Antimony promoted in the liver, as in all mucous membranes, a copious flow of water and mucus.¹

We have thus in our Pharmacopœias most powerful agencies for modifying the quantity and quality of the bile. And it cannot be doubted that further inquiry may extend widely our knowledge of the nature of our already existing numerous tools, so as to confer incalculable benefit on rational medicine. Chemistry cannot render a reason of their mode of action; it has in it something essentially vital, or, if you like the term better, essentially physiological. Still we must bear in mind that, as far as we can see, it is temporary; and, since no one would wish to continue their use for life, we must mainly depend in the end on more direct restoratives of life for final cure, such as are pointed out in the experiments on food.

Mercury certainly is a powerful temporary relief, but the sanguineous congestion of the liver seen in Dr. Jones' experiments should warn us against trusting to it. Again and again the rough clearance has to be resorted to, till increasing necessity for it alarms the patient, and points to the anæmia and weakness which are the inevitable consequences of an habitual employment of that drug.

I understand there is the same objection to *colchicum*. *Manganese* I know nothing about.

Nitro-muriatic acid and *aloës* I am pleased with as bile promoters. The longer they are used the less they are required. *Turpentine* and *rhubarb* are too nasty for continuous use.

¹ "Medico-Chirurgical Transactions," vol. xxxv. p. 249, and "Medical Times and Gazette" for March 19th, 1852.

The chronic action of antimony on the digestive viscera I have not experience of.

Very moderate laxatives even require strict supervision. They did harm in the following case, and in the chapter on the Causes of the Indigestion, and in Case CCXIX. purgatives seem to have originally caused the disease.

CASE CCXXI.—Walter B—, aged 27, married, came to me May 1st, 1867, complaining of pain over the eyeballs, irritability and languor amounting to an indifference alike to pain and pleasure, depression of mind and forlorn views of everything, capricious appetite, and copious flow of pale urine. (I am quoting a sketch of his own case delivered to me in writing, a very pregnant mode of opening the ground in consultation.) These symptoms were of recent super-vention, but he had suffered for some years, from time to time, with intestinal flatulence and with diarrhœa of a fetid, dark semi-fluid, relieved temporarily by aperients, and then followed by costiveness and clay-colored stools. This diarrhœa was most common in spring and autumn and in changeable weather, and had often been preceded by a cold in the head or on the chest, but not always. It had become more and more frequent, and had apparently led to the mental condition above described. It had led also to an itching and pain at the anus, which on examination exhibited a very superficial fissure and a mucous discharge from the rectum. With the catarrh there were very often superficial ulcers in the mouth, and it seemed to me that the sore at the anal aperture was a repetition of the same state in another part.

The tongue was clean, and reddish at the edges. His mode of life was natural and healthy, except when his increased languor made him inept for full exertion.

I ordered him

R.—Confectionis sennæ ʒij,

Sulphuris loti ʒss.—M.

Sumat coch. j min. omni nocte;

and a quinine and strychnine draught twice a day.

In a week he came again reporting that the laxative had acted regularly though mildly, that his anus was not so sore, but that all the other prominent symptoms were aggravated. After the third dose there was an increased sense of fulness in the abdomen along with much rumbling of the bowels, and after the fifth day the mental depression and languor became very distressing. The urine was diminished in quantity and heightened in color, though clear. Throughout the week the stools continued watery and lumpy, indeed, appeared to become more and more unhealthy.

I then prescribed: "tincturæ valerianæ comp. coch. ij min., in aquâ ter die," to be taken for a week, and then the quinine and strychnine mixture alone to be taken.

After a month of such treatment he felt better than he ever remem-

bered to have done since boyhood. He remained free from his old symptoms during the summer, had in September a slight return, readily checked by a bottle of the tonic mixture, and, in fact, did not come to me again till January 22d, 1868. Then he reported that he had caught a cold ten days previously, and that this resulted in a return of his diarrhœa, though not of his former nervous ailments.

I ordered him $\frac{1}{2}$ of a grain of opium with 2 grains of quinine in a pill every night.

He called in the spring of 1869 to say he had never felt so well as he did then.

The local effect of strychnia upon the contractile fibres of the ilia is often of great use in intestinal flatulence.

CASE CCXXII.—Mrs. T—, a mother of two children, aged 40, had suffered for nearly three years from flatulence, for which at various times she had taken much purgative medicine, thereby always in the end aggravating the disorder. About an hour after breakfast she felt an unaccountable sinking, as if she had eaten nothing, so that she frequently drank a glass of sherry at 11 o'clock. In the evening the abdomen always became so distended that she was forced to take her stays off, though she had fastened them on rising very loosely. She had no pain after eating, but, when distended as above described, there was often a sharp stitch in various parts of the waist.

The catamenia were regular, the bowels open daily, the tongue was clean.

There were the symptoms detailed on December 21st, 1867, when I ordered her quinine and strychnine twice a day.

On the 20th of the next month I saw her again. The flatulence was very much better; indeed her stays had got looser and looser till they quite hung about her waist. The change in the area of the ilia must have been something extraordinary. The flatulence had been intestinal not colonic, for it had been absorbed and not exploded. Her bowels had become costive, infrequent in action, and excreting hard stools. Unwilling to break general orders which I had given her not to use purgatives, she had let this matter alone for a week, and had then taken some opening medicine. Immediately after its action ceased, the costiveness returned.

With the costiveness she had a good deal of pain between the shoulders. And the deficiency of excretion was manifested by general sluggishness of mind and muscles, by a feeling of weariness after slighter exertions, and more general debility than when I first saw her, in spite of a confession that the special disorder she came about was alleviated.

On these grounds I added to the quinine and strychnine draughts a drachm of sulphate of magnesia, and prescribed a three grain aloës and myrrh pill nightly.

I specially selected this case because the relief of the flatulence while the general debility was increased, shows that the strychnine did not act merely as a general tonic, but as a local bracer-up.

But, as I said before, it is to a renewal of life by nutriment, and to tonics which increase the power of digesting nutriment, that we look for cure. To which undertaking science contributes the following observations. It was found by Drs. Bidder and Schmidt that a *full diet* augmented not only the quantity of the bile, but also the amount of solid material therein. Thus, whilst a cat on ordinary diet secreted 0.807 of a gramme per kilogramme of weight hourly, and of solid material 0.045 of a gramme, on very full flesh diet, the secretion was in one cat 1.185 gramme of fluid, and 0.062 of a gramme of solid, in another 1.003 of fluid, containing 0.063 of solid. The same fact was fully confirmed by observations also upon dogs and geese, the details of which correspond to the above.¹

Flesh diet causes the secretion of more bile than vegetable food. For example, in an experiment made by Dr. Nasse on a dog,² a diet of bread and potatoes caused a daily secretion of 171.8 grammes, in which was 6.252 of solid matter; whilst meat made it amount to 208.5 of fluid, or 7.06 of solid residue.

Water increases the quantity of the bile within an hour after it is drunk, and not only the quantity of fluid, but also of the solid contents, though in a less proportion. Thus a dog weighing about 5 kilogrammes, which after a meal of 185 grammes of *beef alone* secreted in an hour 2.283 grammes of bile with 0.135 of solid matter in it; after a meal of 25 grammes of *beef* and 158 of *water* secreted 4.030 of fluid, and 0.117 of solid bile. And the same dog, after 185 grammes of *water alone*, made no less than 5.165 of bile, or 0.143 of solid matter. And the same thing was observed in the three other similar experiments.

To this Dr. Nasse adds, that though water increases the fluid bile and also the organic solid constituents, it does not have the like effect on the amount of salts.

On the other hand, it was found by Bidder and Schmidt that *fatty food* instead of increasing, as might have been expected on chemical grounds, the quantity of bile, extraordinarily diminishes it. Thus, in a mean of three experiments on cats, the hourly discharge after a diet of pure fat was of bile 0.327, of solid matter in it 0.036 of a gramme. We might have supposed that the forma-

¹ "Die Verdauungssäfte."

² Nasse, "Commentatio de Bilis quotidie à cane secretâ copiâ," &c. Marburg, 1851.

tion of a substance which is the most hydro-carbonaceous in the body would have been promoted by a peculiarly pure hydro-carbon aliment; but such is not the case. Nay, so far from it, that the numbers given above correspond most closely to what would probably have been the quantity of bile secreted by the animals in a state of complete deprivation of food. Fat appears to be eminently "bilious," as the vulgar tongue expresses it, that is to say, it diminishes the vitality of the liver.

Alcohol, also, by arresting metamorphosis,¹ must be hurtful, as tending to diminish the normal formation of bile.

The rules, then, of diet in intestinal flatulence should be—(1) to use a full allowance of lean meat and water; (2) to avoid fat, butter, and rich sauces; and (3) to diminish the allowance of alcohol.

None of these special items of treatment, however, diminish the importance of *general treatment*. Iron when there is anæmia, and the nerve-tonics quinine and strychnine when there is not, are what I use myself, and it is very rare that I wander from these old friends into the fields of experiment without regretting it. Indeed, the general treatment will oft-times render needless the special, as it did in the following instance:—

CASE CCXXIII.²—A maiden lady past forty, of spare wiry build and sharp decided manners, came in the first week of 1867, on account of the inconvenience—nay possibly scandal—which she suffered from a continually increasing swelling of the abdomen. It varied from time to time, yet had steadily augmented for several months. Latterly, when it was largest, she had felt palpitations of the heart and in the epigastrium, especially when sitting still for longer than usual. The ankles also frequently were puffy, taking the mark of the boot in an unaccustomed way. The catamenia were quite regular and sufficient, the tongue was clean, the bowels were natural in action; and the only abnormal secretion was the urine, which was sometimes thick, and caused pain apparently from excess of acidity. There was no hysteria.

The abdomen was tight and round, and large for a person of her stature. It was very resonant on percussion throughout. There was no glugging on pressure, and the patient stated that air very rarely escaped *per anum*, even at stool.

I desired her to wear an Elstob's belt, and to take $\frac{1}{20}$ of a grain of strychnia with three grains of quiniæ et ferri citras twice a day; also at night another similar dose of strychnia in a pill with two grains

¹ See "Lectures chiefly Clinical," Lecture L., "On Alcohol."

² Case CCXXX. in 2d edition.

of aloës and myrrh mass, and the same quantity of extract of hyoscyamus.

I saw her twice more at intervals of about ten days, and as the belly became softer was able to make sure of the absence of any solid sub-structure to the tumefaction. She went home quite slim and comfortable, but still denied having expelled any explanatory amounts of air by the external vents.

As to the cause of her disease, I found that she kept house for her father, an old and infirm medical man in a remote province. Whenever she consulted him about any little ailments, he always gave her purgatives, and the more abnormal the alvine secretions became, the more purgatives he gave her.

I suppose purgatives had produced anæmia and relaxation of the ilia, which as a chronic condition, continually tending to increase itself, had gone on from worse to worse till the parietal muscles had also become relaxed. It is true that general anæmia, indicated by a pallid condition of the lips, tongue, and mucous membranes, had not as yet arisen; but yet it might have existed in the local organs affected. I have noticed that persons of middle age become generally anæmic much more slowly than the young. For the life of the latter rapid renewal of the tissues is such an essential feature, that a check to the rapidity tells much more severely on their health than it does in the case of adults, and still more of old people. Probably this is the reason why consumption is so "galloping" in youth, so sluggish in old age; and why starvation makes such havoc among young paupers, while on the same dietary their grandparents may struggle on with a half life to the extreme term.

The intention of the belt prescribed in the above case was to strengthen the contractile force of the abdominal muscles, just as a bandage is put round a woman after childbed to restore her pristine figure. It affords the fibres a firm basis of contraction, so that they recover from the half-palsied state, and do not again fall into it. Its pressure, therefore, should be even, and need not be very great. I mention this because patients are apt to mistake the object of the appliance, to suppose that it is designed to expel the retained air by compression, to be disappointed when it does not do so, and to tighten it too much. Now too great constriction acts unevenly, and produces the bad local effect of ill-fitting stays.

Flatus in the colon requires the same medicinal and dietetic treatment as that of the intestines. When there is a tendency to con-

gestion of the rectum and to piles, as not unfrequently happens, cold water enemata are useful, and in elderly persons a carminative, such as extract of rue, or a few drops of ether, may be added to the enemata.

When the abdomen is not much more dilated than natural by flatulence, efforts should always be made to retain the air inside the bowel till the period of fecal evacuation. For not uncommonly the parting with it induces a condition of constipation.

If retained, it may roll about uncomfortably for a time, but will soon either become absorbed or mixed up with the feces, and so assist their normal evacuation, as described in a previous page.¹ The proof of that is that it is not afterwards passed.

¹ See page 235.

CHAPTER VII.

DIARRHŒA.

Difference of diarrhœa from mere frequency of evacuation.—Subdivision of forms.—Their causes and indications.—Supplementary and reflex diarrhœa.—Infantile.—Diarrhœa in typh-fever.—Ulceration of bowels.—Mucous flux.—Copious solid diarrhœa.—Acid diarrhœa.—Use of opium.—Riding in chronic cases.—Cautions to travellers.

WHEN the absorbing power of the intestines is defective, the consequence is an excess in the *quantity* of matters which pass through them; that which ought to be taken up is carried along out into the normal draught, and so constitutes a true diarrhœa.

It is of great practical importance to distinguish this from the mere frequency of evacuation, which is quite consistent with a natural or even with a deficient amount of feces. The number of motions, or the number of times an inclination is felt to void them, is often increased, while even less than the average quantity may be passed in the twenty-four hours. This affection is of the nature of tenesmus, and arises from some tissue lesion of colon or rectum; whereas true diarrhœa, as aforesaid, depends upon defective function of the ilia.

The arrest of function, as declared by the prevailing contents of the stools, constitutes the best principle of division which has been moreover adopted in the chapter on Vomiting; and according to it we may speak without much danger of being misunderstood of *Crapulous*, *Bilious*, *Serous*, *Dysenteric*, and *Choleraic diarrhœa*.

Crapulous diarrhœa is simply an excessive quantity of food taken, or the natural quantity arrested in its solution by suspension of the gastric function. I call it "crapulous," because it is most usual after a debauch; but in weakly persons it is not necessary that the intemperance should be absolute; that which is moderation for others may be an excess in them. An examination of the feces exhibits a quantity of undigested food as the prominent

feature, sometimes fetid and fermenting, and deficient in the bile which should prevent decomposition.

Bilious diarrhœa is the next simplest form of the disorder. Bile, normally poured out by the liver to the extent of from three to four pints a day, if not concentrated by the intestinal absorption, adds largely to the excrements, where its presence is declared by its well-known smell, and by a color exhibiting various shades of yellow, brown, and olive-green, according to its absorption of oxygen and mixture with feces.

The arrest of the absorbing powers of the intestines and the consequent rejection of bile, mixed at first with feces, and augmented by the exudation of water from the intestinal parietes, is what so often happens in comparative health from the impression of cold, from irritation of the alimentary canal by unwholesome food, and from mental emotion. It is possible also that the qualities of the bile itself may be altered in some cases, or its quantity may be increased. It may be poisoned by drugs, as by calomel or by senna, and so rendered incapable of absorption, and be poured through the ilia without their being in fault. Again, congestion of the liver and of the portal veins, such as is especially frequent in Europeans resident in warm climates, causes the bile to be at one time deficient, and afterwards to be poured out in excess. Or irritation of the stomach and duodenum may cause it to be retained in the liver and gall-bladder till it is unfit for absorption. In such cases bile is rejected *per anum* and constitutes the matter excreted in true bilious diarrhœa.

We should distinguish this symptom from a different one sometimes confounded with it—viz., the presence of a light grass-green matter in the stools. This is not bile at all, but altered blood, and denotes inflammation of the mucous membrane, a state requiring very opposite treatment from that proper for bilious diarrhœa. Our best aids to diagnosis are first, the smell: in real bilious stools the odor of the hepatic secretion can always be perceived, in spite of the feces mixed with it; while in the grass-green stools the smell is not of bile, but more or less putrid. Secondly—the microscope exhibits in the mucus the usual globules mixed with small shreds of fibrine and blood globules.

In *serous* or *watery* diarrhœa it is probable that there is an increased exhalation of aqueous fluid from the bloodvessels of the intestines, as well as an arrest of its absorption. In this form,

when pure, if the feces are retained by a voluntary effort, they may be concentrated nearly to their normal condition by the removal of the water, and thus a test afforded that their state depends mainly on the addition of this constituent. For that which can be so readily taken up again into the blood cannot be of a nature very foreign to it. For example, in the diarrhœa produced by a saline purgative you may feel several pints of fluid rolling about in the bowels; but if you resist the inclination to stool, it goes off at last, and you void afterwards little more than the ordinary amount of semi-solid feces. It is not so in bilious or inflammatory diarrhœas; you cannot cause the absorption of the fluid by forcible retention.

Watery diarrhœa, when not arising from the action of drugs, indicates a congested state of the venous plexus of the alimentary canal, and a consequent morbid proneness to deficiency in absorption. The vitality of the mucous membrane is deficient; and if it be not restored, local death, exhibited in the form of ulcers and sloughs, must result. The exhalation, however, tends to become habitual, and so continues beyond the period of congestion, so that the whole mass of blood is relieved of its water, and in this way sometimes dropsical swellings may be re-absorbed and pass off through the bowels.

In *dysenteric* or *mucopurulent* diarrhœa, water is also in excess, but the characteristic feature is the presence of mucus or pus mixed with it; in which also there are shreds of fibrine, blood-globules, and flakes of the epithelium of the bowels.

Should any of these products of inflammation be unmixed with feces, then it is probable they come from the colon or rectum; but if they are mixed up with a large quantity of watery fluid, and still more if that watery fluid shows itself to be the serum of the blood by coagulating with heat, then there is little doubt of their source being the mucous membrane of the ilia. The fluid in mucopurulent diarrhœa is always highly alkaline, and if it be examined with the microscope, phosphatic crystals are found scattered through it. If allowed to stand, it separates into two parts: the one *serous*, varying from transparent whiteness through all the shades of yellow to deep brown; or, where blood be present, to red and black, in which are the flakes of fibrine, the ammoniacal crystals, and floating globules; the other *sedimentary*, consisting principally of gray,

granular matter, the débris of food mixed with more or less of the coloring matter of the bile and half-digested blood.

The degree of serosity and the proportion of the products of inflammation in the first, show the extent to which inflammation has gone in the mucous membrane; whiteness, bloodiness, putridity, alkalinity, being bad signs; yellowness, opacity, the smell of bile, and the absence of putridity, being good.

The second, or sedimentary portion proves the condition of the general system rather than that of the ilia in particular. If it be copious in proportion to the fluid, then the normal function of destructive assimilation is shown to be little interfered with; if scanty, then we know this process to be arrested, the effete tissues are not removed from the body, and we have to do with a more grave state of affairs. The quantity of solid matter is the best test of an advance towards health, or departure therefrom, in all cases where there is this state of the bowels.

The most common examples of muco-purulent diarrhœa are found amongst acute diseases, in low fever, enteritis, and dysentery, especially in the teething dysentery of children. Amongst chronic diseases, in ulceration of the bowels, whether a consequence of phthisis or low fever, it is the most usual course for the symptoms to take.

Bloody diarrhœa, where the blood is in small streaks in the mucus, or slightly mixed with the serum, or mixed with the grass-green mucus above described, shows recent inflammation. When it is in clots, either black or fibrinous, with the globules partially washed away, that a bloodvessel of notable size has been opened, probably by ulceration. Should pus be mixed with it, the diagnosis of ulceration is confirmed. Black, semi-digested blood, precipitated by standing with the sediment of fluid stools, comes from high in the alimentary canal, not seldom from the stomach itself.

Putridity of the stools in diarrhœa always shows that there is an imperfect quantity of bile, one of the most clearly ascertained functions of the hepatic secretion being to prevent decay of albumen. Putridity may arise from two sources—namely, the food taken, or the secretions into the canal. A close examination of the stools will generally distinguish them; for if it is non-digested food which is decaying, then the solid constituents of the feces are bulky, pale, containing large lumps of still paler substance, which under the microscope will be found to consist of muscular fibre,

fat, and other parts of victuals, often swarming with infusoria. Whereas if the fetor arise from the decomposed albumen of the serum, it will be observed to exhale from the more fluid part of the motions, which smell like the washings of macerated flesh, while the solid part is scanty and comparatively unaffected. This shows a much more serious state of the vital powers, and in severe complaints is often the harbinger of death, especially if joined to a peculiar mouse-like smell in the sweat.

In *choleraic* diarrhœa the whole of the blood is so altered in its physical qualities that little of it remains capable of supporting life, or of absorbing the wherewithal to support life. The functions of the liver and kidneys are suspended for want of live blood, no bile appears in the stools or vomit, no urine in the bladder.

For the purpose of comparing the degree in which life is deficient in the different forms of diarrhœa, I subjoin a table in which the first column is occupied by the several functions, the loss of one or more of which characterizes those different forms. It will be seen that the sign of minus can be placed against one after the other till the normal condition of all is finally lost, as an essential, not accidental, part of the disease.

Full Life.	Crapulous diarrhœa.	Bilious diarrhœa.	Serous diarrhœa.	Dysenteric diarrhœa.	Choleraic diarrhœa.
1. Blood healthily sufficient for the support of the whole system.	1. Normal.	1. Normal.	1. Normal.	1. Normal.	1. — (Mass of blood poisoned and half dead primarily affects the whole system.)
2. Coats of capillaries elastic and retentive of the contained blood.	2. Normal.	2. Normal.	2. Normal.	2. — (Coats of capillaries wanting in elasticity, becoming congested and ruptured, let out the blood. The other stages of inflammation may or may not follow.)	
3. Exosmosis and endosmosis of serum through the mucous membranes equal to one another.	3. Normal.	3. Normal.	3. — (Lixosmosed serum passed away by stool, instead of being reabsorbed.)		
4. Bile made in full quantity; its fluids reabsorbed by intestines, and its coloured solids only rejected per anum.	4. Normal.	4. — (Constituents of bile not absorbed, but passed away, forming the bulk of the dejections, and shown by the smell to be unaltered.)			
5. Food fully digested.	5. — (Undigested materials of diet passed away with feces, and hurrying downwards the bile and other contents of the intestines.)				

In some rare instances of mucous flux the stools are acid from time to time. There is nothing special in the pathology of this. It arises simply from so much acid being formed from the decomposition of undigested food, that it cannot be neutralized by the alkaline juices. The acidification takes place apparently in the cæcum, during the delay of the decomposing aliments there; for considerable pain is often experienced in the right iliac region, and in the course of the colon, just before the evacuations.

In all forms of diarrhœa from affections of the small intestines, the evil is twofold: first the aliment, which ought to contribute to the support of the system, is hurried through the abdomen, and so the supplies are cut off; and secondly, destruction is carried on at an increased rate by exhalation from the mucous membrane of the bowels. The stick is being cut away at both ends, and hence there is nothing which produces such rapid emaciation. Where so called "diarrhœa" is reported to you as lasting for any length of time without emaciation, always let your suspicions of the correctness of the nomenclature be roused, and observe carefully whether the quantity of excrement be really in excess, or whether the aliment have not rather the nature of tenesmus, and arise from the colon or rectum. You will generally find such to be the fact, and must vary your treatment accordingly.

Sometimes diarrhœa seems to be the transference of a tendency to exudation of serum from another tissue to the alimentary canal. Such is that which sometimes comes on of its own accord or may be artificially induced in ascites, and which certainly sometimes diminishes the abdominal collection. Such is the diarrhœa of uræmia, which, however, does not usually relieve anasarca, but rather increases it from the weakening of the blood which follows. Hence it is a very bad, almost a fatal symptom, in Bright's disease.

The most important part of treatment is the diet. It must be such as does not need a perfect state of the digestive organs for its absorption, while at the same time it is nutritive to the patient. The best of all is milk and lime-water. In feverish cases it may be iced, and soda-water may be occasionally substituted for the lime. Keeping a person solely on this diet is often alone sufficient to cure all sorts of diarrhœa not dependent on a permanent chronic cause; and even where there is such a cause for it, much temporary benefit is derived, and a sounder starting-point for medical treatment than the previous state is gained.

In a temporary diarrhœa, without other disease, the loss of the normal supply to the body is not of much consequence; a short starvation perhaps does good to a person otherwise healthy. But in severe acute disease, or in long-continued chronic diarrhœa, this is an important consideration, and care must be taken to allow for it. Since food in the usual quantities at once cannot be borne, and is rejected undigested, give it very frequently and in small portions. The alkaline milk diet I have just recommended allows this to be done most conveniently. A jug of the liquid must be kept close at hand and sipped from time to time, so that as much nutriment may be taken in the twenty-four hours as would be done by a healthy person.

It is a good rule when there are lumps of feculent matter in the stools, and a smell like that of normal excrement, to give purgatives, and when there is no normal smell present, to abstain. For it is only the remains of previous constipation that require to be got rid of, and when they are not present, harm is done by purgation. I have known cases of chronic diarrhœa much injured by the routine practice of so beginning treatment.

Where the products of acute inflammation are found mixed in the stools, such as white and opaque mucus, flakes of fibrine, epithelium, blood-streaked mucus, bright green matter, &c., as above described, then leeches, fomentations, warm hip-baths, and poultices to the abdomen are appropriate, and should not be delayed. In children, the whole abdomen and loins may be fastened up in a large circumambient poultice, which they cannot wriggle away from, a leech put on near the navel, and the bite allowed to bleed for a little time. The articles of *materia medica* I have most trust in are opium, ipecacuanha, and carbonate of soda. A syrup may be made of ten drops of laudanum, two grains of ipecacuanha powder, and a scruple of soda in an ounce of half treacle and half water, and doses of not over a teaspoonful given at hour intervals. I have found this answer better than the old plan of administering calomel. In teething infants this treatment is of the most marked utility. I suppose the anodyne soothes their neuralgia. In their case, too, lancing the gums will sometimes stop the most violent diarrhœa where the stools show evident proofs of the inflammatory condition of the ilia. The action of the lancing is probably much the same as that of leeches, viz., a relief to the congestion of the mucous membrane. Upon the protrusion of the teeth it can hardly

be supposed to have any influence, but that it alleviates toothache any adult may experience for himself, though it is impossible to get from his little patients an account of this remedial effect.

But there is no doubt that the most active cure in infantile diarrhœa is change of diet. Bringing up by hand or unwholesome states of the breast-milk are generally at the bottom of the ailment. No remedy is equal to a healthy wet-nurse, or where prejudice forbids that, as near an imitation as can be made of human milk by that of animals, such as the donkey's, or the cow's diluted and slightly sweetened.

In low fever the presence of diarrhœa still suggests to many practitioners, and used to suggest to many more, the employment of mercury. The effect of this is the increase of solid sedimentary matter in the stools; in other words, a restoration of the destructive assimilation going on in the body. The motions are diminished in number and in fluidity, but not in actual quantity. In fact more solid effete matter is excreted, and thus the tissues devitalized by the typh poison are removed, and room is made for new nutriment. This increase of solid matter is taken as an evidence and test of benefit accruing from the use of mercury, and as a prognosis of good. But I may say without reserve (and am glad of the opportunity of so doing) that I think this an unwise hurrying of nature; for only the destructive assimilation is augmented, not the constructive, and thus the powers of the body and its resistance are lowered. Now the use of hydrochloric acid both stops diarrhœa and increases at the same time absorption in the intestinal canal. For some years, therefore, I have employed no other remedy in low fever, and with decided success, as I have more largely set forth in my published "Clinical Lectures."

Where, in the absence of fever, blood is passed by the bowels, the two most powerful means of checking it I have found to be turpentine and acetate of lead, especially the latter. Its direct influence as a poison on the bowels would have led to an expectation of this. If the hemorrhage has gone on for some time, I am inclined to think it must be sometimes due to a clot distending the bowel, and preventing it contracting upon the bleeding spot, for certainly a dose of castor oil, in the results of whose action a quantity of pale clots were exhibited, has several times in my experience stopped bleeding.

Diarrhœa from ulceration of the ilia tends to prolong itself; for

the weaker the system is, the more irritable are the sore places, and the less can the morbid actions they set up be resisted. It is wrong, therefore, to let it go on an hour longer than we can help. The readiest means for arresting it are such as blunt the sensibility of the ulcerated spots. Milk-and-lime-water diet should be used first, then chalk and opium, which appear to act on the sore mucous membrane just as they do on a raw blistered surface of skin. If these fail, sulphate of copper should be used in doses increased from a quarter of a grain up to two grains.

Where there is a simple flux of transparent mucus without fever or pain on pressure, and no fibrine or blood in the motions, the vegetable astringents, such as logwood, bark, kino, and tannin, are often of great use. In such cases, too, I have prescribed iron, in the form of the tincture of the sesquichloride, with seeming benefit. I must, however, say, that I feel doubtful in the greater number of cases whether this form of flux be not due rather to the colon than to the ilia.

Where the solid matter is pale, fetid, and consists mainly of undigested food, inspissated bile may be given with benefit; the stools become less fetid and less frequent under its employment. This is particularly the case in children whose mesenteric glands are diseased. Pepsin also diminishes the fœtor of the motions in the best way—namely, by promoting the normal solution of the food, and acting as a direct restorative.

Acid diarrhœa indicates the free employment of chalk.

The use of opium in diarrhœa must never be made a matter of routine. As a general rule, I have found it beneficial without consequent harm in cases where there were tenesmus and frequent stools; but where the feces are bulky and copious it appears to impede the natural secretion. Where the stools also are putrid, caution is required in its use. In the diarrhœa which so often accompanies and proves fatal in uræmia, it checks the debilitating flux, but is apt to bring on coma.

In some cases of diarrhœa from chronic mucous flux of the intestines, without ulceration or acute inflammation, I have known horse exercise to be serviceable. I suppose it is the gentle agitation of the abdomen, combined with the air and amusement, that proves of use.

In recommending the recreation of travelling to invalids subject to diarrhœa, you must be very careful of the route you select.

The epidemic influence of cholera which has overspread Europe during the present generation, visiting almost every square mile of its surface several times during the last few years, has in many places left behind it a chronic endemic poison. The natives are insensible to it, but few strangers escape becoming affected more or less, according to their idiosyncrasies. Strong persons find it only an inconvenience, but an invalid is put in some danger, and certainly loses all the advantage of the tour. This is especially the case in the mountainous districts of the south of France, the Pyrenees, and Dauphiny, and in the volcanic regions bordering the Rhine, the Eifel and Moselle country, as well as those in the centre of France, the ancient province of Auvergne. All these places are attractive from their picturesque beauties, and therefore it is necessary that travellers should be warned of this evil attendant upon choosing them as the scene of a tour. It must not be supposed that this diarrhœa is solely the result of the foreign modes of cooking. I have known English biscuits and porter, and boiled eggs, adopted as a diet without relief, though of course nothing foreign could have got into them. I believe the cause to be as I have represented it—namely, a poison left endemic since the passage of cholera through the country, but to which the natives have become acclimatized. That it is of late years only that this diarrhœa has been prevalent is shown both by local report and the omission of all mention of it from the well-known work on "Climate," by Sir James Clark.

One source from which strangers contract this diarrhœa is an evil capable of, and loudly calls for amendment: I refer to the filthy privies in continental inns. A gentleman, lately eminent in our profession, and of good judgment, told me that, during a Pyrenean tour some years ago, he entirely escaped the diarrhœa which everybody else without exception suffered from, by adhering to a strict rule of never entering one of these disgusting holes, but worshipping Cloacina under the pure light of the stars. Invalids and ladies cannot so well manage this, unless they are rich enough to travel with carriages and servants, and locomotive water-closets.

Those who have already suffered are by no means exempt; indeed they would seem, by the occurrence of such cases as are illustrated in Cases XXXIII. and XXXIV., to be peculiarly exposed to relapses from both internal and cosmical influences.

In Italy I have found that the best remedy for the diarrhœa which so often attacks travellers from over-fatigue in summer and autumn, is lemon-juice and the horizontal posture. Lying down for a couple of hours on the back, and drinking two or three glasses of strong lemonade, with very little sugar, generally stops it. If that is not successful, opium must be had recourse to; but it is seldom required in that land of lemons.

CHAPTER VIII.

CONSTIPATION AND COSTIVENESS.

Definitions.—SECTION 1.—CONSTIPATION.—From mechanical obstruction—Nervous exaggeration of the sphincters—Catarrh—Atony of colon—Insoluble articles of diet—Remedies. SECTION 2.—COSTIVENESS.—From deficient excretive life—Quality of stools—Occasionally interchanged with diarrhœa—What diseases it accompanies—Effect on nervous system—Indications of treatment—Inconveniences of purgatives—What sort of purgatives are to be adopted—Dietary—Water—Watering places—Cautions respecting the use of them—Hydrophathy.

THE words which head this chapter are sometimes employed as synonymous; but I do not wish them so to be understood here. By the former I would imply injury to the health from the quantity of the feces retained in the alimentary canal; by the latter a deficiency in the quantity expelled by reason of a deficiency in the quantity formed.

SECTION I.

Constipation.

The expulsive power is relatively or absolutely in default—the feces, normal or abnormal in quality, collect in some part of the bowels, and give proof of that collection by being occasionally passed in considerable quantities at a time. In the stools there are portions drier than the general mass—scybala of various sizes, dark brown or black, and usually with less smell than ordinary feces.

The most complete type of constipation is that which arises from mechanical obstruction, to discuss which, however, would lead us too far from the plan of this volume. It has not much connection with ordinary causes and effects of indigestion. It is the case I alluded to in describing the expulsive power as “relatively” in default.

It is also relatively in default in cases of hysteria and nervousness which spasmodically contract the sphincter ani and rectum,

so that the fecal mass is kept back, and for its due expulsion there would be required a more than ordinary force, which in point of fact is not likely to be forthcoming in such cases.

And not uncommonly a catarrhal state of the upper parts, say of the stomach, will originate a relative deficiency of expulsive power, by enveloping the alimentary mass in a slimy coat, so that to push it on extraordinary peristaltic force is needed.

But the most common case is an absolute deficiency of power presented by a weak state or atony of the colon. This is a state frequent among those who lead a sedentary life, the anæmic, those debilitated by long acute illnesses or confinement to bed, and may be suspected wherever we observe a pale, greasy skin, and weak limbs. Old people very frequently suffer from it; so frequently indeed that a diminished propulsive force in the large intestines may be considered as a normal consequence of advanced age.

No class of persons oftener suffer from constipation than old Indians. Their sedentary life and high feeding are partly chargeable with their liability. But in addition to this, the endemic diseases of the country are often the exciting cause, and I have distinctly traced the commencement of a constipated habit of bowels to attacks of dysenteric fever brought on by malaria. The inflammation of the colon seems to leave behind it a local paralysis of the part; it acts in fact like the habit of taking artificial purgatives. So that the Anglo-Indian who suffers in this way must not be always accused of previous excesses or laziness.

Neglect of the natural call to evacuate the bowels also produces this sort of torpidity by too long-continued dilatation even in young and strong persons. This neglect of the natural call may be from laziness, may be from a painful condition of the evacuating organs. (See Case CXLVIII.)

Where there is an individual tendency to atony of the colon, the tendency is aggravated, and sometimes first made apparent, by certain articles of diet, especially those which contain much insoluble matter. It is a mistake to suppose that these "irritate" the bowels, or pass quickly through them. The reverse is true, and, as a general rule, the regular transmission of the mass is in proportion to the completeness of its digestion. No sort of food is so apt to be followed by constipation in atonic persons as that which contains a large amount of matter incapable of being acted upon by the digestive juices, such as skin and gristle, the husks and stones of

fruit, and half-cooked vegetables, in which, besides cellulose, there is the equally impracticable substance, unbroken starch. All substances capable of being squeezed into a tough mass, such as puff pastry and new bread, come under the same class of insolubles; and gum and gelatine are liable to the same imputation according to some observers.

The most successful practice in simple constipation is the free use of cold-water enemata, and a long-continued course of quinine and strychnine. When there are no piles, this may be advantageously combined with the use of aloës. The treatment does not forbid the administration of whatever else may be needful to relieve the disease in which constipation occurs; which disease of course requires to be removed before the local symptom will be free from risk of relapse. It is scarcely necessary to say that nothing will avail if the bad habits which have induced the constipation are persisted in.

If there be piles, the introduction into the rectum of a greased rectum-plug for a few moments, so as to empty them, washing with cold water, and lying down on the back for ten minutes after evacuation, give great relief.

Constipation may often be much alleviated by oleaginous articles of diet, such as butter, bacon, &c., being taken with the usual food. This is especially the case with old people, who are apt to be too abstemious in this respect. We should not fail to impress upon them the physiological fact of costiveness being a normal condition of advancing years, and lead our patients to adjust their expectations to their age. They must not demand from sexagenarian bowels the same sensitiveness that is due at two-and twenty. Daily evacuation, which should be the rule in youth, is an excess in an old man, and still more in an old woman. Thrice a week is enough for even robust persons.

If the constipation arise from impediments to the movements of the bowels upon one another, such as adhesions, scars of old ulcers, compression of the area of the gut, tumors, retroversion of the uterus, and the like, a more soothing treatment should be adopted. Then the enemata should be warmed, and have an ounce of olive oil added to them. If there be local pain, a little opium may be dissolved in the oil, and some leeches applied to the spot corresponding to the seat of pain. Hot fomentations and poultices of fresh laurel leaves also give great relief.

The depending position of the cæcum makes it the commonest seat of fecal collections; and if it is found difficult to fix on any other spot, it is wise to take it for granted that this is the failing one, and direct our local applications accordingly. We should not be satisfied with the one or two very copious stools which will follow these efforts; the treatment must be persevered in until the bowel has recovered its tone, or there will be great risk of relapse.

When there is much flatulence with the constipation, turpentine and rue may, with advantage, be added to the enemata.

SECTION II.

Costiveness.

IN costiveness the absolute quantity of feces is always too small. It is in fact a deficient excretion into the alimentary canal.

That the greatest part of the matters which ought to be thus excreted come from the liver we have not the means of knowing, but the main point, that they are derived from portal blood, we are justified in asserting; so that the solution of the former question is of the less importance. And, at least, that a great deal of the color of feces is due to bile we may know from the phenomena attendant on obstructed gall-ducts.

But even when there is complete occlusion of the communication between the liver and intestines, the feces by no means consist entirely of undigested food; there is in them a great proportion of a yellowish-gray granular matter which appears also in the healthy state, and still makes up the bulk of the solid excreta.

In deficiency, therefore, of the excretive powers of the intestines generally (*vulgo* "costiveness" or "biliousness"), there is a different substance retained than is the case when local lesion of the liver or gall-bladder obstructs the passage of bile. There is a partial retention of the whole matters destined for depuration from these quarters, instead of a complete retention of one constituent.

Hence there is not, as happens in mechanical retention of the bile, the well-known stain of jaundice communicated to the blood and skin, nor are the stools clay-colored. But there is a dinginess of complexion, and the stools are scanty. The skin is greasy and opaque, the countenance sometimes puffy and bloated, sometimes thin and pale, the lower eyelid especially sallow and discolored. The sebaceous follicles on the *alæ nasi* are stopped up with black matter.

There is seldom any decided emaciation, nor is there always even loss of muscular power; but still there is great sluggishness of body and apathy of mind, and often a miserable want of decision and energy. Digestion is accompanied by a good deal of discomfort and flatulence, but rarely by actual pain, and the distress does not begin till several hours after eating, so as to be with difficulty referred to any particular meal.

In the least complicated cases of checked intestinal secretion the stools are dark, hard, and dry; but their appearance may be varied by several circumstances.

Sometimes there is an augmented secretion of mucus, and then they are intimately mixed up with it, forming a black, slimy, almost gelatinous mass.

Sometimes, from the appetite not suffering, the patients will eat largely, and then there appears irregularly from time to time a quantity of fetid, semi-digested food, constituting a sort of diarrhœa accompanied with pain and colic. And this diarrhœa will often be the occasion of your patient's first coming to you, so that you might be deceived into a false impression of the case.

The congestion of the portal vessels in the upper part of the alimentary canal is often followed by the same state in the lower, and thus piles are formed, which add much to the general distress.

Costiveness is a common accompaniment of anæmia, chlorosis, and debility in both males and females, of diseased hearts, especially where the muscle is dilated rather than hypertrophied, of contracted liver, and, in short, of anything which makes the abdominal circulation sluggish. Sometimes it is found in cases of pulmonary tuberculosis, but hardly ever in consumptives under middle age. In their old age it may, like constipation, be considered the normal state of the abdominal viscera. All those pulmonary cases in which I have seen it last long enough to be a marked feature have been examples of senile phthisis. It is often the first and most characteristic phenomenon of that change of system which takes place in females after the cessation of the catamenia. The stools get gradually more and more scanty as the uterine secretion diminishes, as the pulse grows feebler, as the feet and hands are more liable to get cold. There is evidently lessened vitality throughout the whole body.

Habitual constipation, especially if it be habitually attempted to be relieved by purgatives, often induces costiveness. The "bilious"

aspect of an old Indian is almost proverbial. You will usually find these persons have been blue-pillers from early life.

One end of this state of things, if left unchecked, is gradual progress from bad to worse. The decrease of destructive assimilation loads the tissues with effete matter, useless for the purposes of life, and a constant source of general discomfort. This impedes the constructive assimilation of food as well—growth is arrested, the blood is not renewed, and hence progressive anæmia, weakness, want of nervous and muscular power, and possibly in the end the degeneration of one or more of the viscera, and death from that cause.

A very striking attendant on the loss of destructive assimilation, is the depression of spirits; melancholy is so named from the dark, scanty stools, which were observed by the Greeks to be associated with it. It appears to me to be an almost universal rule in disease that the general discomfort is proportioned to the arrest of this vital destruction, and I am inclined to attribute it to the influence on the nerves of general sensation of effete matter which is retained. In all maladies both acute and chronic, may be observed the truth of this law. Mark the ushering in of a fever: the malaise is excessive, there are pains in the back, in the head and the limbs, or a sense of what the patients graphically call "all overishness;" but when they get worse, and destruction begins, when the effete matter passes off as urea and increases the specific gravity of the urine, then no aggravation of local symptoms, however much it may alarm their physician and make his prognosis graver, prevents the general feeling of relief. Or watch a case of consumption: the deposit of tubercle may be insignificant, and is at all events in its first stage, yet the patient is despairing of recovery. Why? Because the skin is sluggish, the bowels costive, the urine of low specific gravity; because, in short, there is retention of effete matter in the system. But let this tubercle soften; let there be night-sweats, copious expectoration, diarrhoea, everything that prophesies ill, and who so full of hope as the sinking sufferer himself? Morbid states where destruction is in excess are the most fatal, but those where retention preponderates are invariably the most distressing.

Costiveness must be regarded as a disorder of the whole system, and not of the intestinal canal alone. The only effectual remedies are those that are advised under that conviction.

The objects of treatment must be: first, to relieve the body of

the immediate presence of effete matter; and, secondly, to prevent artificially its reaccumulation till such time as a complete renewal of the tissues has taken place. Then the body ought to be able to take care of itself, and then, and not till then, a cure may be said to have been performed. The attention to local disorders, arising from the successful study of morbid anatomy, has too much made us forget this main object of all medical work—the replacement of morbid tissue by healthy. “*Renew my age*,” was the chief earthly blessing prayed for by the inspired prophet; and physiology teaches us it should be the motto of the rational physician; for if he omit to rebuild the healthy, his care for the destruction of the unhealthy is all thrown away.

Purgatives may very fairly begin the treatment; for the immediate relief they give to the feelings of discomfort is great. But they must not end it. And let not the relief be set down to the mere “clearing out of the bowels;” it is the cleansing of the blood which is the real object of the remedy, and the real cause of the relief. An inspection of what comes away shows it has been newly formed; it is fresh bile and other natural constituents of recent feces, not of those which have rested long in the canal.

Nothing is easier than thus with a vigorous blue-pill and senna draught to drive away, as with a charm, the patient’s discomforts; and he is ready enough to cry out that no more medicine is wanted. But what is the consequence of leaving off treatment? The renewal of the blood and tissues not having had time to regain its original activity—there not being enough new-made blood to carry on vigorous life—the effete materials again collect, and the disease takes a fresh starting-point. Again and again the coarse expedient is called for, and at last fails to effect its object of giving relief.

To avoid this evil consequence it is best to give no quickly-acting complete purgatives which directly deplete the abdominal plethora by serous exudation; but rather such as cause a gradual increase in the solid matter of the stools. Aloës and rhubarb are the best of these; and I find it also beneficial to combine with them resins which act as a tonic to the surface of the mucous membrane, and prevent the exudation of serum and mucus. Four grains of aloës-and-myrh pill, every night, will in a week produce all the good effect of strong purgation; and it will produce the good permanently instead of merely for a time.

All accessory food that has the property of arresting destruction

must be left off. Wine, beer, tea, and coffee must, on this account, be excluded from the dietary; and milk, cocoa, whey, soda-water, Seltzer-water, &c., substituted for them.

Perhaps it is on account of their temporary arrest of destructive assimilation, that general tonics, such as cinchona and quinine, rarely agree well in those cases. I find it better to give pure bitters, such as oak-bark, quassia, and gentian, which seem to act chiefly on the mucous membrane. Their use is to increase the appetite; and, when that object is attained, I leave them off; or, if it is attained without them, I do not begin.

Water is a very accessible remedy, and certainly a very rational one, when the destructive assimilation is deficient. The conclusive experiments of Dr. Böcker and of Dr. Falck,¹ show the increase of all interstitial metamorphosis by this agent to be in close proportion to the quantity taken, within certain bounds; and all who have heard or read of the agreeable sensations experienced by patients during the water cure, cannot doubt its power of removing morbid accumulation of effete matter in the tissues. In this lies its strength; for, as Dr. Böcker observed, "the demand for new tissue, as expressed in the sensation of hunger, keeps pace exactly with the extent of the metamorphosis." And if this demand is rightly supplied, the result must be a complete renewal of the body.

The testimony of experience to the use of water as a remedial agent, is shown in the patronage bestowed from the earliest times upon numerous springs whose saline constituents are even less abundant than those of ordinary drinking water. Pfeffers, historically famous for freeing Martin Luther of his demon-haunted hypochondriasis, is still the resort of the invalid. It is situated in a most gloomy hole; and the copious hot stream that boils out of the rock is almost chemically pure. So that really the pure warm vesta of the fountain, innocent of salt, should have the whole credit. The same may be said of the well-known Gastein and Wildbad, the crowded Baden, imperial Plombières, of the French Aix, and our own long-frequented Buxton; for, practically speaking, the influence of the saline particles they contain must be reckoned for

¹ See "Zeitschrift der K. K. Gesellschaft der Aertze zu Wien," April, 1854; and Vierordt's "Archiv," i. p. 150, 1853.

nothing. It is certainly nothing as compared with the effects of moderate doses of water in Dr. Böcker's experiments.

As physiologists we cannot be surprised at the benefit derived from the simple expedient of drinking water beyond the demands of thirst, in all diseases of arrested metamorphosis. Taken several times a day between meals it is a most efficient remedy. Warm hip-baths are also of great use, and can be borne even from the first by those reduced to extreme anæmia and lifelessness. Afterwards, the cold sponge-bath, preceded and followed by friction to the skin, is a most active promoter of life in the skin and capillaries. The raising the specific gravity of the water by the addition of salt prevents the chill which fresh water is apt to impart. So that even persons with cold hands and feet, and very sluggish circulation, indicated by weak heart and pulses, can bear to be sponged with sea-water or brine.

Alkalies and neutral salts have the same action on the moulting of effete tissues that water has. Hence the repute of many really strong mineral wells. But care is needed lest the same result should follow their use which is threatened by the unguarded use of purgatives. In cases where there is arrest of metamorphosis without organic change in any of the viscera, I find that the weaker the spring the better for the patient.

While pulling down an old house, we must remember to be building up the new. Let full supplies of albuminous material be continuously kept up in such forms as the absorbents love. Let milk, mutton, and bread be the staple diet, with the smallest quantity of anything else that human weakness will submit to. If the patient be one of strong mind, the best and bravest thing is for him to carry out advice himself. He will then have gained a victory, not only over the flesh, but over the spirit. But if he is no Stoic, and cannot attain to the dignity of being his own gaoler, we need not be afraid of sending him to a hydropathic hotel. A little pressure will induce the owners of these houses to carry out rational directions, and the situations of most of them are well chosen for the advantages of air and amusement.

Medical men sometimes fear that in sending patients to water-cure establishments they may be abetting quackery. In my opinion, scientific hydropathy, the renewal of the body by water and food, the increase of growth secondary to the increase of moulting, is very far from quackery. It is not an underhand mode of doing

nothing, but a *bonâ fide* use of a powerful tool. And therefore a contrary effect than what has been feared would follow; for the very fact of medical men using the treatment as remedial, would show that science ranked it as a genuine physical power; and that, consequently, it is capable of doing as much harm as it does good; in fact, that, like all medical treatment, it needs as much prudence to prescribe it rightly as the most powerful agent of the pharmacopœia. Its being thus adopted by regular practitioners would soon remove it out of the hands of advertisers, who discredit their really valuable wares by attributing to them impossible powers.

CHAPTER IX.

NERVE DISORDERS CONNECTED WITH INDIGESTION.

Headache and Hemiparesis—Vertigo—Loss of control over the thoughts—Epilepsy—Chorea—Stomach cough—Anæsthesia—Paralysis—Atrophy of muscles—Flushing of the face—Nettle-rash and other skin eruptions.

THE most common morbid affection of the nervous system arising from imperfect digestion is HEADACHE. The consequences of a debauch in a person unused to it are quite as often splitting and throbbing of the temples as “hot coppers” and nausea. It is not usual to consult a physician for such an occurrence, and therefore I have no illustration to quote. It has been suggested that the state of the stomach is dependent on the state of the brain, which is poisoned by the presence of absorbed alcohol, and secondarily causes the vomiting just as cerebral tumors and inflammations do. I cannot agree with that view of the matter, because certainly we find headache accompanying derangements of the stomach which are not the result of alcohol. Instances are given in Cases XXVI. and L. where the comparative overloading the stomach, that is lading it with more than in its weakness it was able to bear of vegetable food, brought on, each time separately, severe headache. In Case LVI. indigestion of meat, in LXII. indigestion of fat, brought on headache on each occasion. In these last two it was followed by constipation, but that is not invariably the case. In the “bilious attacks” also, as depicted in Cases CLIV. and CLV., headache is a familiar accompaniment of the acute gastric catarrh. This may be viewed as the acute form of the complication.

A more chronic form is exhibited in the following:—

CASE CCXXIV.¹—Rev. T. S.—has been an occasional patient of mine since 1860, when he was 45 years old, a confirmed bachelor, contented with his lot and quite disposed to a rational enjoyment of life. He had had gout in early manhood, and lived temperately by

¹ Case CCXXXI. in 2d edition.

rule to avoid a recurrence. But he had an anxious, easily-worried mind, and the occasion of his coming to consult me was the occurrence as often as twice a month of intense headaches, lasting several days. They occupied the whole head, obscured the sight, and rendered him unfit for his clerical duties during the paroxysms. I found that each attack was preceded by gastric symptoms, complete anorexia, and sometimes by vomiting. A holiday trip to the seaside, when the cares of the parish were forgotten in boating, sketching, riding, and society, entirely relieved them and kept them off for many weeks afterwards. After each attack he was used to have pain in the anus and urethra, and pain on passing urine, which was acid, and deposited copious clouds of lithates on standing.

A long-continued course of non-purgative doses of taraxacum, the habitual use of potash-water as a drink at dinner, and latterly some occasional short courses of quinine, have made Mr. S— a much stronger man, and relieved him from the dominion of his headaches. It is possible too that he takes the world easier as he gets older, and being convinced of the evil consequences of worry, avoids it more.

In such cases as the above one cannot avoid seeing that the path of events is first the arrest of the gastric digestion by the accumulating influence of over-thought on the stomach, and by this latter organ retaliating on the brain so as to disable its functions.

I do not consider this patient to have been well treated. The alkaline drink probably promoted the secretion of gastric juice, and the taraxacum the secretion of bile, but remedies cannot be trusted to alone, as I have remarked in the preceding chapter. More decided tonics are needful to complete a cure.

These attacks will very often occur at the menstrual and half menstrual periods in women.

CASE CCXXV.¹—Mrs. James R—, aged 39, came to me in May, 1861. She was married, but childless, though the catamenia were copious and regular. About every fortnight the slightest annoyance or bodily fatigue brought on nausea, loss of appetite, and a throbbing in the temples. This was generally in the evening, and the next morning after a restless night she awoke with an intense headache, so that she could not raise her neck from the pillow. This lasted till next night, and then went away, almost always suddenly, and she found herself quite well without any abnormal evacuation. I gave her steel wine after food, and the intervals of the headaches seemed to grow longer; but I only saw her twice afterwards, and do not know if she were entirely cured.

The occurrence of instances like the next, where a mental respon-

¹ Case CCXXXII. in 2d edition.

sibility which to a man would be a flea-bite, overwhelms a woman, should be a caution to those who are desirous of equalizing the brain-work of the two sexes.

CASE CCXXVI.¹—Miss H—, a red-faced, dairymaidish woman of 40, had thrown upon her the charge of a large inn in a market town, where she was kept going all day among farmers and troublesome barmaids in consequence of the difficulty I found in curing her father of rheumatic gout, so as to enable him to take his share. She could get on very fairly, were it not for attacks of sickness and fluttering at the epigastrium, accompanied or followed by intense headaches at night so severe as to waken her up out of sleep with pain. Otherwise the bodily functions were healthily performed.

She came to me April 19th, 1861, and I gave her iodide of potassium and tincture of sesquichloride of iron.

I saw her again on May 6th, when she said her head was much better since the last prescription, but that her legs were swelled. On inspection, this proved to be due to lumps of *erythema nodosum*. I then gave her citrate of quinine and iron. She went on with this some weeks, and was quite well as long as she took it; but on leaving it off her headaches, &c., relapsed, and she came up to London again about them. So I desired her to take sesquioxide of iron with her daily food as long as the untoward exertion of mind and body, to which she was exposed, lasted. This seems to have been effectual.

In these last two cases I ordered iron, but I do not think it such an important agent as quinia, which in the second prescription of the two I have joined with it. However, the iron did not disagree, even in the red-faced and apparently red-blooded patient. Indeed, where we see other evidences of need for tonics, our diagnosis of the anæmic condition of the blood by the color of the face must be very guarded. The tint of the inside of the lips is a safer guide.

Still better than quinia is strychnia.

The comparison between strychnia and iron was in the next case made by the patient herself, and I think she was right.

CASE CCXXVII.—Mrs. M—, aged 34, always eats a heavy dinner in the middle of the day with her children, and very little else till breakfast the next morning. This unnatural burdening of a stomach naturally weakly has been aided and abetted by a habit of frequently taking purgatives. Between them they have gradually brought on severe indigestion, manifested for upwards of a year (at the date of her first coming to me, May 4th, 1869) by a sensation of weight at the region of the pylorus, and intestinal flatulence. Latterly she had also suffered much from giddiness, especially on rising from her chair. I gave her quinine in $\frac{1}{2}$ grain doses, with $\frac{1}{20}$ of a grain of strychnine,

¹ Case CCXXXIII. in 2d edition.

and on June 4th her stomach symptoms were so much relieved that I left it off, and substituted citrate of iron and hydrocyanic acid, to which at the end of the month I added tincture of *actæa racemosa*. In November she came again, saying that the latter prescription did not agree as well as the first, to which she had from time to time had recourse during the summer and autumn, and had kept fairly well. But now that the cold weather was returning her feeling of giddiness had returned also. I recur, therefore, to the quinine and strychnine.

It was mentioned in Case L. that the patient was fearful of "apoplexy" from the giddiness which accompanies these headaches. Such a fear doubtless makes the nervous symptoms worse, and it ought to be dispersed by all possible means consistent with truth. The idea is not confined to bad observers, but was exhibited in the following instance by a medical man.

CASE CCXXVIII.¹—Nov. 29th, 1866.—H. W—, aged 47, a country surgeon, who has inherited and kept up a first-class steady practice, has become lately anxious about his health, and he is fearful of apoplexy, of which his father died. So that he thought even of disposing of his practice. What causes his anxiety is that at least every month he has, generally the day after some unusual mental exertion, an attack of violent headache. It begins at daybreak, and gets rapidly worse, so that he is unable to get up, indeed can hardly raise his head from the pillow. It is accompanied with great nausea, but rarely with vomiting, and goes off rather suddenly in about forty-eight hours. His tongue is pale and flabby, the pulse beats soft and rather quick, and he notices that of late his complexion has grown paler and that he is yellower "about the gills."

Ordered to take 2 grs. of quinine and $\frac{1}{10}$ th of a grain of strychnia twice a day. In case of being surprised by a headache to take 2 drachms of ammoniated tincture of valerian every three hours till it disperses. To avoid all purgative drugs, to drink light Burgundy, and at dinner only. By all means to persist in following his profession, and to take interest and pleasure in it.

I heard from a patient of his in March, 1867, that he had become quite well and easy about his health.

The counsel to the above, to continue the practice of his profession, was given with a view of avoiding the hypochondriasis and stomach derangement often thereon consequent, which so often is produced by forsaking an active life for idleness.

The valerian was designed as a temporary relief only, the basic treatment being quinine and strychnine with the hygienic measures detailed.

¹ Case CCXXXIV. in 2d edition.

That such treatment will cure even very obstinate headache, deeply ingrained by time, is shown by the following narrative.

CASE CCXXIX.¹—A very respectable licensed victualler, aged 44, of moderate and regular married habits, was introduced to me by his medical man Dr. Slight, Dec. 21st, 1866. For more than eight years he had suffered from sick-headaches. They used to come on once in six weeks, but had grown gradually worse and more frequent, so that then he was never a fortnight without an attack. He almost always has warning of its approach two or three days beforehand conveyed by his friends noticing an unusual brightness and clearness of his eyes. Then the day before he feels a giddiness in the head and a coldness of the extremities. Then at night or in the early morning on comes the headache so bad that he cannot raise his head from the pillow, much less get up to business. This continues till he vomits, which brings immediate relief. He had taken at various times much *pilula hydrargyri*, but latterly Dr. Slight had very properly substituted podophyllin for that “blue ruin” to chronic disease.

I continued in the same spirit the alteration in the treatment by giving him aloës and myrrh for a few days only, and then leaving off purgatives altogether. I prescribed also—

R.—Quiniæ sulphatis gr. xl,
Succi limonum recentis q. s. ad illam solvendam,
Tinct. valerianæ fl ʒiiss,
Aquæ ad Oj.
Coch. ij max. ter die.

R.—Tinct. valerianæ ammoniatæ,
Coch. ij min. in aquâ soluta sumantur
alternâ quâque horâ imminente cephalalgîâ.

On February 20th, 1867, I was informed by Dr. Slight, who came to me about other business, that our patient was much improved, and that he thought he was getting quite well.

On March 4th I saw him. He had just had one paroxysm of the bad sick-headache, but that was the only one since Dec. 21st. He had, however, frequently headaches of a hemicranic character of a morning, which are relieved by a cup of strong coffee.

Thinking his constitution might be becoming too habituated to the quinine, I changed it for the quiniæ et ferri citras, of which he was to take six grains twice a day.

Since then he has been free from headache (*April 6th*, 1867).

The pain in the last case is described as HEMICRANIC when getting better, so I presume that when that peculiarity occurs the prognosis may be considered more favorable than when it persists all over the cranium. In the ensuing instance again there was hemicrania, and it may be described as a mild curable case.

¹ Case CCXXXV. in 2d edition.

CASE CCXXX.¹—James C— has been a frequent patient of mine since early in 1861, when he was a widower of 60 years of age. Thirty years previously he had rheumatic fever and inflammation of the heart, the remains of which are discernible in an irregular pulse, a sharpish beat in the heart, and a systolic murmur. He had an appointment affording him the blessing of regular occupation, but latterly he had found himself growing unequal to the mental calls made upon him. Any unusual exertion brought on sick-headaches, beginning with dizziness and oppression at the vertex, but usually fixing on one side or the other, and ending with vomiting.

This was invariably the case if he went too long without food. Very often a headache would begin before breakfast, but if he could manage to eat his usual meal it would go off.

Sometimes in the intervals of the headache he was much troubled with nettlerash.

I had him leeches at the back of the neck, and I afterwards gave him citrate of quinine and iron; but what I found did most good was the advice to be never as much as four hours without food. He convinced himself by experience this was the best treatment.

In the autumn he took it into his head to marry, and that brought back a relapse of headaches. But a return to his former treatment took them away, and he is still able to go on with his occupation—at least he was so able when I last saw him in the spring of 1866.

I afterwards attended him for catarrh of the bladder, but I heard no more of the dyspeptic headaches.

Remark the nettlerash, a near relation of *erythema nodosum*, which was noticed in case CCXXVI., and affecting the same habits. I feel sure both these cutaneous disorders originate in the stomach, and are propagated to the surface by a sensitive nervous system.

I am sorry I had him leeches; it was a foolish concession to the opinion of another.

On the other hand, when sick-headaches are growing worse they seem usually to occupy the whole head, or the back part of the head, as described in the history given by the next.

CASE CCXXXI.²—February 23d, 1867.—Mr. W. S—, aged 44, a clerk of sedentary habits, was always very well till eighteen months ago, never suffering from anything except occasional piles, so usual in sedentary men. At about that period he began to have sick-headaches, which now occur at least once a fortnight. They begin with what he calls, basing his nomenclature I suppose on some false medical theory, an attack of “liver;” that is to say, he loses his appetite, and can eat nothing from nausea and disgust for two days. He then becomes prostrate, has a “grasping pain” at the back of the

¹ Case CCXXXVI. in 2d edition.

² Case CCXXXVII. in 2d edition.

head, and in the right hypochondrium. The urine becomes dark and high-colored, and then thick.

Purgatives had been prescribed for him in a hope of warding off these attacks, and in consequence the bowels had become exceedingly costive, so as to seem to require a continued use of such drugs.

R.—Quiniæ sulphatis gr. ij,
Strychniæ hydrochloratis gr. $\frac{1}{20}$,

in succo limonis et aquâ soluta bis die sumantur. Omittantur alia medicamenta.

It will be seen that in such-like cases I am disposed to attribute the costiveness to the disease, rather than the disease to the costiveness. I believe purgatives to be highly injurious, indeed, to produce the disease, as will be illustrated in a chapter on the Causes of Indigestions. Those only are ever permissible which increase the tone of the alimentary canal, and render it more disposed to continue its action without help than to require additional help as time goes on.

Of the kind of purgatives alluded to above aloës is the best; but its action increases by use, and, therefore, it can easily be diminished in dose, and gradually left off.

CASE CCXXXII.¹—W. G. R.—, aged 26, has never been strong, and comes of a delicate family, his mother having been a great sufferer from derangements of the digestive organs. Since boyhood he has suffered from headaches, which have been growing steadily more frequent, so that for three months there has been hardly ever a day without one. His habits are these—he goes to business after breakfast; at half past one he dines; at three in the afternoon a sort of “hard feeling” in the stomach comes on, and nausea; in a short time this turns to a headache, with pain over both eyes and in the temples. He then takes a pill, which acts by half-past nine. He goes to bed, and the headache passes away during the night. If it lasts till the morrow, he takes a fresh purgative. After such a history it is almost needless to add that he has got much thinner during the past year, and that his urine is frequently thick, showing the imperfect vitality of the kidneys. What he brings with him is clear, of the specific gravity 1.015, acid, and not albuminous.

March 8th, 1867.—Ordered him a grain and a half of quinine and $\frac{1}{32}$ d of a grain of strychnine twice a day for three weeks, and every night for a week three and a half grains of aloës and myrrh pill.

April 15th, 1867.—Mr. R.—reports that he took the medicines for ten days, and found himself so much improved that he left them off. Then he found himself falling back gradually, and began them again, and is again progressing most favorably. His bowels are open now without the aloës. I have ordered him citrate of iron and quinine as a change.

¹ Case CCXXXVIII. in 2d edition.

The phenomenon of sick-headache is closely connected with GASTRIC VERTIGO, the next nervous symptom arising from indigestion which I propose to sketch with the help of the patient's graphic description.

CASE CCXXXIII.¹—R. N—, aged 26, a melancholy, weather-beaten young man, first consulted me June 12th, 1866. He had been educated as a sculptor, but had lived a roving life, had made an expedition into the central wilds of Australia, and otherwise knocked about the world a good deal. In the forests he had been subjected of course to great privations, supporting existence for some time mainly on tea and tobacco; and seemingly in consequence of that the veins of his legs and thighs had grown varicose. He wished on this account to forsake the plastic art and take to painting, as requiring less standing, and giving wider scope for inventive genius, of which he has a fair share. He had from boyhood been subject to sick-headaches, and had been used to be purged for them. The purgatives seemed to relieve immediate discomforts; but he thought the attacks were thereby aggravated, as they had become latterly more and more severe and frequent; and they were now accompanied by such giddiness that he was unable to stand or to employ his mind at all. Bright globes rolled before his eyes, and any attempt to rise brought on nausea like sea-sickness. This was occurring every ten days at least, and he was so evidently an invalid that a marriage he was on the point of contracting was objected to by the intended father-in-law on the score of his ill-health.

The purgatives had made his bowels very irregular and costive.

I gave him first four grains of aloës and myrrh pill with $\frac{1}{20}$ th of a grain of hydrochlorate of strychnia nightly, and 3ij of ammoniated tincture of valerian thrice a day. After a fortnight, during which he was free from vertigines, the pill was diminished to two and a half grains of the first ingredient, and $\frac{1}{24}$ th of a grain of the latter. The valerian was exchanged for quinine.

I last saw him several times in July. He had but one slight attack of vertigo; he had been able to leave off the pills, as the bowels were spontaneously opened by solid feces daily after breakfast. I recommended him now to go to a good surgeon and have his legs attended to.

In October I found he had continued well till he had his varicose veins operated upon, and then the pain and distress of the operation (which was also unsuccessful) laid him up again with his old vertigo and headache. But a week's strychnine and quinine set him up again. I recommended him in future to take his course of the same medicine the first ten days in each month.

Again in this case it will be seen that purgatives made the patient worse.

In the next case the nausea proceeded further, even to actual vomiting.

¹ Case CCXXXIX. in 2d edition.

CASE CCXXXIV.—Mrs. C—, aged 55 (but with a look of more advanced age), though wealthy, has lived a life of much anxiety and sorrow. She has also had a good deal of illness. Up to 1851 she suffered constant loss of blood from piles, but at that date they were removed by operation, and the stools are natural, except that from the weakness of the rectum she requires always to use an enema. Since then her principal complaint has been vertiginous headache. It has commenced usually by giddiness, and then a pain starts at the back of the left eye and runs often down the nose. Then vomiting follows of food quite unaltered from the time of being swallowed. If this headache comes on before rising, it will gradually cease soon; but if it commences in the course of the day it is sure to last four-and-twenty hours; sometimes it has lasted a week. Lately these headaches have occurred much less frequently, and are much less severe; but their place is occupied by a more distressing symptom, namely, a constant pain, aggravated by food, running from the back of the ensiform cartilage to one or the other of the shoulder blades. This quite prevents her taking solid food at all, so great is the pain caused by it. Liquids, however, can be swallowed with less distress.

R.—*Opii* gr. $\frac{1}{8}$, ante cibum ter die.

In some cases the languor and tendency to a comatose state seem even more distressing, and preventive of active pursuits, than the giddiness which has preceded them; as in the following instance:—

CASE CCXXXV.—Mr. Matthew W—, a Yorkshire manufacturer, aged 27, married, and of temperate habits, had in the winter of 1864 and '65 much anxiety and pressure in business. This induced a state somewhat resembling delirium tremens, accompanied by a fluttering and sensation of emptiness at the epigastrium. He had been subjected to a good deal of treatment regular and irregular, and when I saw him on June 12th, 1866, he had just come from a long bout of the water-cure which had made him worse, and he was quite unable to attend to business. His bowels were distended by flatus, and he also frequently eructated the wind from his stomach in bursts. But what troubled him most was languor and sleepiness: and if he shook himself up and tried to direct his attention to any object the head became giddy, and there was a confusion of ideas which prevented his inditing even a common letter. His appearance was that of health, but he had a look of anxiety in his countenance.

I prescribed for him two grains of quinine and $\frac{1}{20}$ of a grain of strychnine in lemon juice twice a day, but on June 19th there was no change in the symptoms except that he yawned a great deal. I then added to the prescription a teaspoonful of cod-liver oil with each dose, and recommended a milk diet instead of meat, water, and vegetables on which he had been living.

On July 24th I saw him again, and he reported himself as much better, and that he had gained seven pounds in weight. Latterly the oil had caused a little nausea, so I ordered him to leave it off and stick to the alkaloid tonic and milk. He continued to improve,

taking modifications of the same remedies and the oil from time to time; and in October resumed a moderate amount of business.

I did not see him again till November in the following year, when it appeared that the attractions of money-making had overcome his prudence. He had been too industrious, his flatulence and indigestion had returned, and with it a morning headache, incapacity of fixed attention and sleeplessness at night. This last symptom had replaced the semi-comatose languor of the previous year. He sleeps best in a strange bed away from home.

I have given him as an experiment purgative aloës and myrrh pills, valerian, shower-baths, opium; but nothing suits him so well as the treatment first prescribed. I have also advised his changing his residence and living further away from his manufactory.

He has since continued well.

I think this functional disturbance of the brain is especially frequent when the indigestion takes the form of *intestinal* flatulence.

CASE CCXXXVI.¹—Miss P—, a stout lady of 52, first came to me in May, 1858. She had lost her husband three years previously, just at the period of the cessation of the catamenia, and since that time had suffered from indigestion in various forms. Latterly she had been much alarmed by the occurrence of frequent attacks of giddiness; and her son, a medical man, thought these might be due to diseased heart. I found these attacks of giddiness were always coincident with the rolling of wind about in the bowels, that they were relieved when it passed away, and were also relieved by a strong purgative, though they came on worse again after its action.

The administration of valerian and charcoal always does this patient good, but I have not seen her lately.

This frequently recurring giddiness has been explained as a sort of drunkenness, caused by the absorption of alcohol evolved by the fermentation of sugar in the alimentary canal.

But there are several reasons against this explanation. First, in producing alcohol capable of intoxicating an adult, say five or six ounces at least, a bulk of carbonic acid would be formed enough to burst the bowels all to bits. Whereas in fact they are dilated only to the extent of a few cubic inches.

Again, when we see that fermentation has been going on in the stomach, as in certain catarrhal conditions of the organ with the tendency to parasitic growth mentioned in a former chapter, we do not find as a rule any remarkable giddiness complained of.

Again, the breath is not scented with alcohol, as it surely would be were much alcohol absorbed.

Again, the symptoms are not all like those of drunkenness.

¹ Case CCXL. in 2d edition.

In respect to the last observation, it is true that inexperienced persons, such as the lady last quoted, may sometimes tell their physician that they feel, when giddy, as if they had been "taking too much" (alcohol); but the more habitual devotee knows the difference of the two sensations, and draws a broad line between them.

CASE CCXXXVII.¹—Herr V. J—, aged 30, a musician and teacher of music, consulted me in June, 1866, concerning a peculiar kind of giddiness, which would seize him at all sorts of inconvenient times, and quite disqualified him for the exercise of his profession. He would, in going through the streets in a hurry to keep an appointment with a pupil, suddenly become so giddy and blinded that he tumbled against passengers, and was forced to catch hold of neighboring railings for support. Vast dusky globes of mysterious gloom rolled before his eyes, he lost sight of the ground before him, so that a billowy gulf yawned under his feet, and he swayed helplessly on the brink. It was a continual renewal of the punishment of the company of Korah. "Haven't these symptoms some connection with your indulging in the gifts of Bacchus as well as singing their praises?" "No, indeed—no one knows better than I do, I am sorry to say, the effects of taking too much; but this is quite different; it is nothing like either being screwed or *devil's trembles*." (The medical reader will identify by its initials the scientific name of the disease.) He said his belly became blown out with excessive flatulence; if he could explode, all was well; but if not, then the above-mentioned symptoms supervened. Sometimes, however, vomiting would relieve him; and if he had a succession of the attacks, a stout drench brought him temporary alleviation. He said he had taken much and various purgative medicine for this purpose, and felt sure that the general effect afterwards was deleterious.

CASE CCXXXVIII.²—Another patient, A. W—, whom I saw in consultation with Mr. Hewer, in April, 1867, and where the intestinal flatulence owed its origin to excessive bloodletting after some sort of fit long ago, complained to me that the ground seemed to be *rising behind him* as he walked, so that he had a constant fancy that he was going to be overwhelmed. This was a sensation not dissimilar to that noticed by the last three.

Once an incurable punster, in putting his case before me, made a quaint play of words describing the connection of the brain and the stomach, which may serve as a reminder of the fact.

CASE CCXXXIX.³—Mr. H—, a railway traffic manager, of 40, complained to me in September, 1862, that for seven years he had suffered from the frequent occurrence of very fetid stools, unformed

¹ Case CCXLI. in 2d edition.

² Case CCXLII. in 2d edition.

³ Case CCXLIII. in 2d edition.

and pultaceous, passed usually in the morning on first rising with a little griping. What most annoyed him was at these times he experienced great difficulty in transacting business requiring attention; the amount of fetor in the stools was an inverse measure of the mental powers; as he expressed it, "the addled eggs in the motions addled the brain."

He was used to dine in the middle of the day, and, I think, derived some benefit from my advice to him to postpone the heavy meal till evening. Ipecacuanha and opium also seemed of use to him.

The nervous symptoms arising from indigestions are nearly always worst in the morning, and they are lightened as the day goes on.

CASE CCXL.—H. H—, a temperate and steady-living widower aged 27, is a man whose pride is in his biceps, and in those knobs of brachialis anticus which athletes only can show. But his digestion is not so strong as his limbs. He has for many years suffered from heartburn, with a rising of acrimonious matter into the mouth, two or three hours after meals, gastric flatulence during the day, and colonic flatulence at night. This heartburn is exceedingly apt to occur as he comes in from Highgate to his work in Chancery Lane, and then it brings a perceptible irregularity of the heart and an intermittence of pulse, if the morning is cold. During the forenoon the skin at the top of his head feels tight, and he is apt to become excessively giddy, as if on shipboard, and the ground seems to be rising up towards him. His spirits get exceedingly low, and a sudden feeling of depression, mental and bodily, comes over him at times, followed by a profuse perspiration. These symptoms usually go away gradually as the day wears on; or they may be relieved suddenly by the bursting up of a gush of wind from the stomach. The latter evacuation also stops immediately the irregularity of the heart.

Breakfast always causes more inconvenience than any other meal; and that in consequence of the time of day at which it is taken, than its materials, for the same food at other hours does not equally affect him.

I find (January 10th, 1868) that he is in the habit of coming into town by train every morning, a bustling habit, which often arrests digestion in those in whom it is naturally weak. I advise, therefore, that he walk or ride, instead of rushing in by rail, and that he should take a draught of quinine and strychnine twice a day for a fortnight. The acrimonious regurgitations may be alleviated with soda and morphia lozenges.

On February 4th, 1868, he reported but very little improvement. The heart still intermits and jars the epigastrium. But he is able to run a mile on end, and lately, after racing with and beating three friends, he was less blown than any of them.

I strongly advised his being less gymnastic, and taking more bodily rest. I prescribed strychnine and hydrochloric acid.

Closely related to the before-named vertigo is a peculiar mental listlessness, what the Greeks called ἀπώρια. It usually comes on at most inconvenient times, in fact just when the mind is the strongest excited to prevent it. It often attracts the patient's attention more than the originating symptoms do, and indeed it requires some cross-examination to elicit evidence of them.

Sometimes, as in Case XXXIV., it will alternate with diarrhœa and flatulence.

CASE CCXLI.¹—A tutor of a large and rising college at Oxford, aged 26, in March, 1861, was frightened by the unaccustomed occurrence of trembling, and a tendency to lose the recollection of his whereabouts during divine service—a circumstance most particularly annoying to him from his having been recently appointed a chaplain. He had always been free from any excesses in wine, tobacco, women, or secret lust; but he read very hard for his degree and fellowship, and took a good deal of beer at dinner. He did not acknowledge to any indigestion affecting the stomach; but on inquiry it appeared that he had latterly had that peculiar looseness of bowels and fœtor of stools which proceed from imperfect solution of food, and in the evening not unfrequently was harassed with a gurgling sound in the bowels. He sometimes perceived black specks floating before his eyes previous to the occurrence of the faintness.

I gave him quinine and strychnine, and advised his playing at rackets, instead of taking dull constitutional walks. A fortnight afterwards he came to report himself as much better, and since his marriage I have seen him looking well, when making a professional call on his wife.

It is sometimes exhibited in the form of false impressions on the organs of the senses. For example, as singing in the ears.

CASE CCXLII.—*October 24th, 1867.*—John W—, a country solicitor, aged 59, was thrown out of a dog-cart sixteen years ago, and appears to have cracked the base of his skull, for he was insensible for a long time, and had bleeding from the left ear. Ever since then he has been subject to singing in that ear like the sound of a tea-kettle; but it was by no means constant, and had nearly ceased, when last December he had another fall, and was laid up seven weeks at a London hotel in consequence. Since then he has become dyspeptic, and has been often troubled with restless nights from flatulence. This flatulence never comes on till five hours after a meal. When he is so troubled the singing in his head returns very strongly, and he can estimate the state of his stomach by his ears. He finds also that the best remedy for the singing in the ears is a mustard plaster to the epigastrium.

¹ Case CCXLIV. in 2d edition.

In the next an unnatural thirst was exhibited, connected with a deficiency of saliva.

CASE CCXLIII.—E. C—, aged 30, a music and singing master of active and regular habits, and of apparently a robust constitution, rushed to me in the second week of 1867, in great alarm that he should not be able to resume his teaching after the usual vacation. For six months past he had become subject to palpitations of the heart on the slightest mental emotion of any kind; they were, however, rather relieved than aggravated by bodily exertion. These palpitations sometimes ended in a *globus hystericus* of the throat, rendering singing, and still more speaking, very difficult. The hysteria rarely produced tears, and never the involuntary screaming which is its common manifestation in robust young women.

His appetite was good, the action of the bowels and kidneys natural.

What, however, troubled him most was an excessive dryness of mouth and thirst, which would come on sometimes in the middle of a lesson, and which he had tried to remedy or to guard against by drinking a large quantity of water (sometimes brandy and water) during the day. This had got worse and worse, so that before Christmas he was quite unable to continue his profession. He had hoped the rest of the holidays would set him up again, but it had not done so.

He himself attributed his thirst to the exhaustion of the fluids of the body by excessive perspirations on exertion, which he had been subject to for three years, but which had got worse since he had experienced the other symptoms.

R.—Tincturæ valerianæ ammoniatæ fl℥ $\frac{1}{4}$.

Tincturæ digitalis ℥viij.

Olei rosmarini ℥iij.

Aquæ fl℥ $\frac{3}{4}$. Ter die.

In ten days he had lost the thirst entirely, and was so much better in other respects also that he was able to resume practice. For that reason I substituted for his draughts the following pills:—

R.—Zinci valerianatis,

Pulveris digitalis, āā gr. xl.

Extracti hyoscyami gr. xx.

Olei rosmarini ℥x.—M.

Fiant pilulæ xxiv, quarum sumat unam bis die.

He said he found these pills much less efficacious than the draughts, but still they were sufficient to restore him to complete health in two or three weeks.

I have sometimes remarked that valerianate of zinc is a much less powerful remedy than the valerianate of ammonia contained in the compound tincture. It is more convenient to carry about, and that was the reason why I prescribed it in this instance. The oil of rosemary makes valerian more active, and is very clean flavored.

Another form of cerebro-spinal disorder dependent on faulty digestion is EPILEPSY, which is often in these cases of an exceedingly fleeting character.

CASE CCXLIV.¹—Late one night in June, 1854, I was summoned to see a patient of the late Mr. Tcgart, Miss W—, aged 13, whom I found in a violent epileptic fit. The closeness of the sleeping nursery showing a careless, unphysiological management, I suspected corresponding neglect in the dietetic discipline as well. I accordingly administered a stout purge, and the next day was shown a chamber utensil full of hard lumps of feces, mixed with half-digested fruit and other rubbish. The patient had no more epileptic fits.

A somewhat similar occurrence to this is quoted in Case 63, where the indigestion of an unaccustomed amount of adipose aliment induced a single attack of epilepsy not repeated—at least not repeated during the eight months which elapsed after I wrote that narrative.

As acute morbid conditions of the alimentary canal originate acute epilepsy, so chronic morbid conditions promote chronic epilepsy, that is to say, epilepsy of a milder but more confirmed character.

CASE CCXLV.—H. R— was much like ordinary lads till the age of 19, when he went to school in Switzerland. He there began to suffer from attacks of vomiting, for which he appears to have suffered many things of many physicians. I first saw him on the 2d of April, 1868, when he certainly looked very ill, and indeed reported that the attacks were getting more frequent, coming on nearly every fortnight, and lasting several days. There was discomfort on pressure of the epigastrium, and this discomfort was increased shortly after the examination. I ordered him gr. xv of Boudault's pepsin, with food three times a day, and requested the family physician to watch that he took no other drug. He continued free from vomiting till July, when going out into the cold air after a ball brought back his illness, and when I saw him on the 16th the epigastric pain was so bad that I ordered two leeches to be applied. I also prescribed some quinine and strychnine. But I directed my chief attention to regulating his diet, which was rather a troublesome task, as his appetite is large, and he is a growing young man. I saw him again in March, 1869, when he reported considerable improvement in the violence and frequency of his attacks. I could distinctly trace their immediate causation to changes of temperature. But during the autumn he began to suffer from slight epileptic seizures, sometimes falling down suddenly from his office stool, and sometimes finding himself recovering from a fit as he lay in bed. This is coincident with a recurrence of the inability to digest a full meal. I have put him on bromide of potassium.

¹ Case CCXLV. in 2d edition.

To the next case there is a somewhat longer history. I do not know the character of the "bilious attacks" mentioned; but I should guess they were not dissimilar to those described in Case CCXLV. The description of the *petit mal* of epilepsy is very graphic.

CASE CCXLVI.—J. E. B—, aged 36, though not a native of the United States, has been seventeen years in business at New York. At two or three and twenty he began to suffer from "bilious attacks," occurring about once a month. Five years ago these increased, and were often accompanied by a sense of weight at the pit of the stomach. He then came over to England for a holiday, and got into better health, but on his return to America he became as bad as ever, and had besides two attacks of illness in which he felt very queer, but had no knowledge of their nature. Then he went to Nevada, and had eight or nine of these queer attacks, and at last learnt their nature, after the seventh or eighth, from a clerk, in whose presence he was taken ill, and who made known the fact that they were epileptic. During the winter of '66-'67 he was free from any consciousness of epileptic seizures, but found his memory unequal to the demands made by business. So in February he came to this country again. In April his bowels became costive, and he had two fits.

These fits are always very slight; he stops in the middle of whatever he is about, loses consciousness, and sits chewing, muttering, and staring, and at length comes round, feeling neither tired nor sleepy, but quite well. On one occasion he was walking with a small parcel in his hand, when he found himself turning into a yard which was out of the way, without knowing why he got there, and became aware that he had gone through a seizure while walking by a lad telling him he had dropped his parcel. Seeing the slight nature of his attacks, he is not himself afraid to go about alone, but his friends are naturally anxious to prevent his doing so. He is never convulsed, nor are his attacks preceded or followed by erections or emissions.

I advised his taking twenty grains daily of bromide of potassium, and a course of quinine and strychnine for the first week in each month. This was on May 2d, when he was going to spend some time with country friends in the North.

On July 22d he came to me again in London, reporting two fits in the intervening twelve weeks. He had been keeping a diary, and from that it appeared that each fit was preceded a day or so by giddiness, with complete constipation of the bowels. On this hint I prescribed him a pill of colocynth, jalap, and mercury, to take immediately those premonitory symptoms could be detected.

In the next four cases the improvement in the patients by simple attention to diet seems to fix on the digestive organs the blame of the malady.

CASE CCXLVII.—Benjamin M—, aged about 40, first came under my charge October 23d, 1858. A letter he brought from his medical

man described him as subject to confirmed epilepsy for two years. Several times a week he got giddy, was unable to stand, sometimes lost his senses, sometimes was convulsed, but rarely bit his tongue. After the paroxysms he always felt tired, and usually went to sleep. He had always been temperate in eating, drinking, sleeping, and matrimonial matters, and could assign no cause for his epilepsy. On examination, I found tenderness on pressure at the pit of the stomach, and the patient said that he felt as if a weight were laid on that part, especially during the wet and cold weather.

To restrain the secretion of mucus, I ordered him a quarter of a grain of nitrate of silver night and morning, and some bismuth and sesquioxide of iron twice a day. But the most important part of the prescription was as follows: "Avoid beer, pastry, fruit, sugar, tea, and coffee. In place of the latter, take milk and soda-water, with stale bread or biscuit for breakfast. At dinner eat once-cooked plain meat, stale bread and green vegetables."

I saw him again November 18th, 1858; no improvement had resulted, and all I could do was to encourage him to persevere.

I did not receive another visit till July 5th, 1860, when he reported that he hardly ever had any attacks of giddiness; indeed, never except after violent exercise. To my surprise, and at first consternation, he said he had been continuing the nitrate of silver, with occasional intermissions of a week or so, up to that time. No discoloration of the skin had occurred, however. I then gave him citrate of quinine and iron, which a letter from his wife reports set him in strong health in a few weeks.

He had no more fits till 1862, when over-attention to business seems to have deranged his digestion, and he had a few slight epileptic attacks while dressing in the morning. I advised a recurrence to his former dietary and to the last—prescribed medicine.

In the spring of 1866 he called to report that he had got quite well, and kept so up to that date by dint of adhering to a strict plan of diet, grounded on the one I had written out in 1858.

CASE CCXLVIII.—Rev. George O—, aged about 24, married, was first my patient in August, 1856, for non-syphilitic periosteal rheumatism which completely crippled him, but vanished with remarkable rapidity under the use of iodide of potassium. He continued well till September, 1861, when he began to have epileptic fits. He came to me in May, 1862, when I kept him a month in London, and seeing the former success of iodide of potassium in one disease in his case, tried it again in another. While in London he was free from fits, but no sooner did he return home and resume home habits, than they became worse than ever, though he increased the dose of the iodide. So he left it off, and when I next heard he was taking, under advice, mercurial alteratives "to act on the liver," and so on, not apparently with any advantage.

I next saw him in January, 1867, when he said the fits had become so frequent and occurred at such inconvenient times, that he had been forced to give up his clerical work. I had originally advised that, and, indeed, it was in consequence of that advice that he had deserted me in 1862. However, the idleness did no good, till some person

recommended him to give up beer, and from that date the epilepsy began to improve. The said drink seemed to have been a part of what I called above "home habits," though it had always made him flatulent, and he had found his digestion much better since he took only water. He was anxious to try some bromide of potassium, and I allowed him to do so, but still urged him to persist in his abstinence, as to that I attributed his improvement.

In March he called to report that he had had only one fit, and in that consciousness was not entirely lost.

CASE CCXLIX.—William B—, aged 50, a carter, was admitted to St. Mary's March 25th, 1852, for epileptic fits, which seemingly owed their origin to cerebral lesion, the consequence of a fall; for there was partial paralysis of one side of the face, and imperfection of memory. However, it was elicited, by examination of his wife, that he was very much troubled with waterbrash, and that the urine had the thick sediment of a dyspeptic. Her description of the fits also seemed to refer part of their origin to the gastric indigestion. For she said that each fit usually consisted of a sort of faint, in which the senses were lost; and then her husband broke out into a sweat, retched violently and sometimes vomited, and then came round (*petit mal*). He never struggled or foamed (*grand mal*). This occurred, by her account, as often as four times a week.

He was in the hospital eleven days; and during his stay was treated, after being purged, with a careful dieting and a mixture of hydrocyanic acid and soda. By this means the pyrosis was kept completely in abeyance, and during that time there was no epileptic attack. He said too that his head felt less heavy and painful.

But as no hope could be held out of a restoration of the organic lesion, he was removed by his friends from my care.

CASE CCL.¹—In November, 1863, Dr. Wallace, of Parsonstown, sent to consult me Mr. James E—. It appeared that he had become subject to attacks of sometimes partial, sometimes complete, loss of sensibility, preceded and accompanied by a cramp in the arms and twitching of the face. Observation of the stools elicited the fact that they frequently contained mucus. A tonic pill of myrrh, aloës, turpentine, and henbane, stayed this formation of mucus. Coincident with the commencement of that treatment there was a marked improvement in the nervous symptoms. I then prescribed quinine and strychnine, but have no further note as yet.

In the next case the flatulent distension of the bowels before the fits seems to associate the epilepsy with deranged digestion. The attempt at cure by special drugs was a failure. I regret to say that I did not pay sufficient attention to dietetics and digestion at that time.

CASE CCLI.²—A. G—, aged about 40, first came to me in January, 1851, after having been a patient of the late Dr. W. F. Chambers for

¹ Case CCXLVI. in 2d edition.

² Case CCXLIX. in 2d edition.

five years for epileptic attacks, occurring about every fortnight or three weeks. He had been taking sulphate of zinc (gr. iij bis die) and much purgative medicine, and I continued the prescription.

I saw him from time to time during the next few years, and found that the fits were invariably preceded by flatulence and distension of the bowels, and immediately announced by perspirations and pale urine. By the end of 1852 the fits had become less violent, and assumed a regular periodicity, coming on every eighth night between ten minutes before and ten minutes after twelve. I do not think he made any more attempts to get well.

There is a sort of modified chronic CHOREA which seems dependent on chronic causes in the alimentary canal, just as acute chorea is often dependent on acute causes.

CASE CCLII.¹—C. J—, aged 26, an accountant, came to me on February 5th, 1867, in much shame-faced fear, under the idea that his state of health was the delayed retribution for nasty habits of secret lust practised when he was a boy. He was troubled with involuntary twitches of the facial muscles, low spirits and causeless fears. His breath felt hot to him; his scalp and anus itched; and the abdomen seemed to burn as he lay in bed. His sleep was disturbed by terrible dreams. The spasmodic movements of the face were, however, what troubled him most as a man of business, for they made him ridiculous, and the more he endeavored to control them, the worse they were.

The urine was natural. Indeed, I could detect nothing contrary to nature in the functions of the body, except in those of the alimentary canal, whose secretions were reported very fetid at times.

He had taken zinc and other specifics without advantage.

I gave him valerian for two days with some improvement of the sleep (but it is possible that improvement may have been due to his mind being set at rest respecting his youthful nastiness) and then put him on quinine and oil of rosemary, which he continues to take with some benefit.

Symptoms like these are, again, engines by which the advertising quacks extort money. It is difficult to avoid having their obscene literature thrust into one's hands, and it often leaves torturing scars on the mind for life.

Minor degrees of reflex manifestations of nervous action assume more familiar forms. Thus we have very commonly what is known as "STOMACH COUGH," that is to say, cough without any bronchial secretion or other morbid condition of the lungs, and connected with, aggravated by, and yielding simultaneously with, catarrhal relaxation of the mucous coats of the stomach. Usually we may

¹ Case CCL. in 2d edition.

infer this gastric derangement from the symptoms; sometimes we have the confirmation (afforded in the case I will quote as an illustration) of a similar condition appearing at the visible extremity of the alimentary canal.

CASE CCLIII.¹—H. L—, a manufacturer, aged about 30 when he first consulted me in January, 1861, complained of a constant hacking cough, without expectoration generally, but still aggravated by damp chilly weather, and of pain in the left mammary region. His face was pale and flabby, and he had a tendency to grow fat. The chest was quite healthy as far as could be ascertained by the ear. He got better under the use of quinine, and after a few visits I did not see him again till November, 1863, when he came to me with a recurrence of his former symptoms. He in addition complained that “his chest” (pointing to his epigastrium) “gets stuffy and feels too large.” The uvula was much relaxed, and on looking into the throat, it seemed to be redder as you go down deeper. Acting on this hint, I have since accompanied the tonics by gargles of oak-bark and alum, and subsequent attacks have got better the quicker for them. On leaving England, in December, 1864, I commended him to another doctor; but he came to me in October, 1866, saying that he had been quite well till then, when exposure in the country during the wet autumn had brought on an unusually bad attack. I never saw his throat so red, and he said he could feel his œsophagus all the way down to the pit of the stomach. A course of quinine restored him to his usual health. But again in April he has come again with a sore throat and hoarseness, and this time, as in 1861, he has got a hacking cough, and is convinced, as is also his wife, that he is going into a consumption. The chest is quite normal on examination, but the uvula is much lengthened and the throat red. There is great weight at the epigastrium after food, and a sensation in the œsophagus leading him to hawk mucus continually.

Apropos of the relaxation of the uvula, I may mention that he made it much worse at the first by violently causticing the back of the fauces with nitrate of silver.

These cases are best treated by astringents, but changes of weather must be guarded against with especial care. Without the aid of the stethoscope they might readily be mistaken for pulmonary consumption.

The following is a very fair typical example of symptoms such as these occurring, as they often do, in a gouty constitution.

CASE CCLIV.¹—S—, a burly country gentleman of 50, used to have regular attacks of acute gout in the small joints three times a year till 1863, when they ceased. But their place is taken by a worse enemy. For as October comes round annually his throat gets sore

¹ Case CCLL. in 2d edition.

² Case CCLIL. in 2d edition.

and livid red, or else he has a frequent hacking cough, and sometimes both evils together. There is a feeling of weight at the epigastrium after food, and a discomfort, scarcely to be called pain, on pressure of the lower part of the stomach. The bowels are apt to be loose, but he usually restrains the looseness from proceeding to diarrhoea by opium. (*Dec. 19th, 1866.*)

In the last case the pains of gout alternated with the stomach cough and sore throat, but in some unfortunates they may both occur together.

CASE CCLV.¹—G. G—, aged 44, is the brother of a patient who has been under my care for gout, and has himself been bald from an early age. He reports also that former generations of the family have been gouty. He has been under my care since November, 1866, for intermittent sciatica and stiff-neck, much dependent on the condition of the stomach, and which I consider therefore to have a gouty character. He was desirous of reporting improvement in this as time went on, but I cannot say I thought it any better in January 1867, when he began to have cough and then a red swollen throat. The lower lobes of the lungs are apt also to become congested occasionally; but he never expectorates with his cough, which seems to vary much with the weather and state of the stomach. I treated him for some time with quinine, iodide of potassium, baths, &c., without any advantage. In February I gave some unpalatable, or impracticable, advice as to change of climate and lost sight of him.

In the last case allusion was made to the good effect to be hoped from change of climate in irregular indigestions. The next may serve as an example, at the same time that it illustrates another reflex consequence of the disease, namely, CARDIAC DERANGEMENT.

CASE CCLVI.—A fine strapping young Israelite was my patient in 1862 and '3 for flatulence and oppression of the head, often accompanied by palpitation of the heart. I do not think he derived much benefit from the various palliatives I administered to him. Then he went on the business of his firm to the East, and travelled about British India, China, Japan, &c., for three years. During this time he was perfectly well, could eat what he liked, and never knew if he had a heart and stomach or not. In September, 1866, he returned to London, and remained well for a few months. But in the early spring he began to be fidgety about his heart again; it would seem, as he walked through the streets, as if something in the cardiac region "dropped suddenly," and then would occur palpitation. On inquiry I found he had, an hour after food, pain striking through from the epigastrium to the back, and much flatulence.

¹ Case CCLIII, in 2d edition.

Another form of the influence of gastric derangement upon the nervous system is the production of morbid ANÆSTHESIA. As I remarked respecting headache, the most frequent instances are found amongst those who have already made the nervous system susceptible of disease by overstraining it.

CASE CCLVII.¹—An American speculator, aged 48, was sent to me in June, 1866, by Dr. J. Forsyth Meigs, of Philadelphia. He had lost a fortune of ten thousand a year by the civil war, so that he had to begin life over again—an ordeal not so severe in the United States as in England, but still an ordeal anywhere; he had worked energetically to recover his position; he had thrown himself into the turbulent, rather than the quiet joys of life; and he had also gone through certain matrimonial difficulties not unscathed. In August, 1864, he was taken with vomiting and loss of appetite, general debility, deficient sleep, and occasional flatulence. These ordinary digestive derangements were the only trouble till the end of September in the same year, when he found gradually creeping over his hands and feet a peculiar sensation of numbness; not what is commonly called “pins and needles,” but a bluntness of perception, especially in the fingertips, so that he did not know when he was touching a small object unless he saw it; and he often tripped from not detecting a small impediment in walking. On resuming matrimonial privileges, after an interval of abstinence on account of his health, he found that emission occurred immediately on entrance, or even before entrance was effected. His head has been bald since the age of twenty, but in general respects he is a young-looking man. The specific gravity of the urine before breakfast is 1.025, after breakfast 1.015. Under the use of nutritious diet, abstinence from alcohol, and from over-much anxiety in business, and of *nux vomica* and *quinia*, prescribed by Dr. Meigs, his digestion had strengthened and the sensation was returning by degrees to his extremities. I thought he could not do better than take a course of the same drugs for ten days in each month, and follow strictly the plan of life laid down for him by his first-rate physician. It is proposed that he shall spend a few years in taking his daughter round the chief cities of Europe.

He called on me early in the spring of 1867 to report improvement.

Cases such as this last receive names according to the prevailing theories of the period; which names do the patient no harm so long as the theory does not influence the treatment. The principal danger is lest he may fall into the hands of a counter-irritator, who should depress the vital powers by making sore places over the spots where he supposes chronic inflammation to exist. Electricity probably does no harm, but it will be observed that recovery is always coincident with an improvement in the digestion, and I

¹ Case CCLIV. in 2d edition.

think attention to this function is our leading duty ; and alone it may be followed by a cure, so that there is no need of additional treatment.

The loss of nervous function in some cases is manifested in the nerves of motion principally, or even solely. We must presume that it depends on the specialties of the nervous system itself in each individual which portion of it be affected, and that the influence of the alimentary canal is general; otherwise we should be able to map out certain tracts as ruled over by certain viscera, and not find motor and sensory fibres indifferently injured by imperfection of the stomach.

CASE CCLVIII.¹—Colonel B—, aged 43, applied for my opinion on the 30th of July, 1866, about a loss of power in the legs. He has always had a “weak stomach,” feeling a weight at the epigastrium if he takes liberties with his diet, or is exposed to a damp cold. In the summer of 1865 his stomach difficulties were particularly bad, and then he began to notice what he called a “fidgetiness” of the legs, inducing him to kick and stretch them about. Then he found he was less and less able to walk, and then there was pain in the legs felt, especially after any exertion. A mile was the utmost he was able to walk when I saw him. He had been galvanized and had tried a variety of medical treatment, without any advantage that he could discover; the only improvement he could ever notice, was when he was in the bracing air of Scotland. On this hint I sent him thither, with a prescription for quinine and strychnine. I heard from him in August that he digested better and walked better, but that the pains were bad in the legs at night. I added therefore to his mixture four grains per dose of iodide of potassium.

In this instance the sensory tracts do not seem to be injured at all. And the paralysis is not sufficiently complete to cause atrophy from deficient use of the muscles. Indeed, in gastric paralysis (if I may so call it) I have never seen the loss of power so complete as to deprive the muscle of that amount of motion which is conducive to its welfare. The patients can always get about a little, are willing to do so, and very often disposed to exert themselves too much.

This is an important point in the treatment; for if what I have remarked is true universally, we shall be doing harm by following the common practice in telling the patients to employ and exercise the muscles as much as possible; we ought rather to impress upon

¹ Case CCLV. in 2d edition.

them the necessity of avoiding such an amount of motion as nature warns us against by the sensation of consequent fatigue.

When atrophy of the muscles has any connection with derangement of the digestive organs, it is usually to be traced to overwork rather than to underwork. Of this I will quote an instance which I have previously made use of in the later editions of my Clinical Lectures.

(*Clinical, St. Mary's, June 13th, 1863.*) Nathaniel B— is a top-sawyer by trade, aged 45, and was always a hearty fellow, able to do a good day's work, till ten months ago; when, after violent exertion in turning over a mass of timber, he got what he calls "a wrench" in the pit of the stomach, and "has never been the same man since." The appetite failed, and therewith the strength; the muscles wasted, and the whole body grew emaciated. The loss of appetite then became entire, and then increased to an utter loathing of food. He went into Guy's Hospital three months ago, but left apparently dissatisfied and ungrateful. On gaining admission to St. Mary's, May 22d, he seemed much cast down, expecting never to get any better. He was able to walk about, and the chief loss of power seemed in the shoulder-muscles, the deltoid and biceps; and when he tried to "put up" the latter, that is to throw into it the contractile nervous force, it felt quite soft, without any of the corky elasticity which distinguishes a sawyer's arm. He is the father of thirteen children, but since the commencement of his present illness he has entirely lost virile power. He states himself to be a perfectly sober moderate man, and has a good character on that score from his employer.

It is scarcely necessary to say that the epigastrium and hepatic region were carefully examined for evidence of cancerous degeneration, and none was found. The lungs also were thoroughly auscultated, and nothing abnormal was detected, beyond a suspicion of slight comparative dulness in the right apex. He had not suffered from habitual cough or had any diarrhœa.

He was at first kept in bed and given milk and beef-tea every two hours, with ten grains of Boudault's pepsin powders three times daily. In a few days his excessive nausea and lowness of spirits had abated, and he was ordered six grains of quinine and three drachms of cod-liver oil daily in addition. In a few days more he was tried with half a mutton-chop, digested it well, and on the 6th of June was able to take our whole ordinary diet, a pint of milk, and a pint of beef-tea, and a pint of porter. On the 12th (yesterday) he was so much better, that I thought it was scarcely justifiable to let him occupy a place in the hospital any longer, and I trust he will be able to get on as an out-patient.

As he was confined to bed at first, it was not convenient for some days to put him in the scales; but on May 24th we found his weight 8 stone 5½ pounds; on the 30th 8 stone 7½ pounds; on June 6th 8 stone 10 pounds; on June 12th 8 stone 10½ pounds; his height being 5 feet 6 inches.

The only day on which he did not take pepsin was May 29th, when our stock was accidentally exhausted. He then complained of pain at the epigastrium, and attributed that to the omission of his powders.

A somewhat similar case is related before (Case XXII.).

Now, had this sawyer been a gentleman in easy circumstances, the excessive waste would not have been habitual, and he would not have had muscular atrophy of the limbs. The "wrench" would have been confined to the stomach, and he would probably have suffered only from imperfect indigestion, like the sporting-man (Case XXIII.), whose partial paralysis of the stomach dated from hallooing and running on Derby-day. As he went on in life any extra exertion would have induced flatulence, as in the old fox-hunter (Case XI.). Or if he had been in vigorous bloom, the paralysis would have been only temporary, as in the instances of acute indigestion after unusual bodily exertion given in Cases V., VI., VII. The proneness to muscular atrophy may have long existed; but no harm happened so long as the stomach was able to go on supplying nutriment enough to compensate the extreme waste of the violent exertions. No sooner does its debilitated condition fall below a certain point than atrophy is exhibited suddenly and proceeds at a frightful pace.

The only cases in which the easy classes are likely to be similarly affected is when injudicious friends urge them to exertions for the good of their health, or where brain-work occupies the hostile post held by body-work in the instance here before us.

Temporary paralysis of voluntary muscles will sometimes be brought on by gastric incompetence, which may be usually distinguished from paralysis of a cerebral origin by successive attacks not affecting the same parts, indeed having a tendency to alternate from side to side.

CASE CCLIX.—Y. M—, aged 62, had lived an active intellectual life without any marked sensual excesses of any kind. At one time he thought he was taking too much alcohol, so he became a tee-totaler for a time, but for some years past had taken a few glasses of light wine daily. He was sent to me by his physician in May, 1869, principally on account of an increasing wakefulness by night, irritability of temper, and occasional headache. But he had suffered from flatulence and acidity of stomach for years, and those had increased simultaneously. About three weeks before, being at his worst, he suddenly lost the use of the left arm and leg, so that he staggered

into a seat. After a few days no trace of palsy remained. Again, a fortnight after he came under my cognizance, he lost power in the right arm for a day or so, and for a few hours spoke thick. Henbane and Indian hemp relieved his sleeplessness, and then he began taking the $\frac{1}{20}$ of a grain of strychnia with tincture of black snakeroot twice a day. In November I heard from his doctor that he was much better, and only required occasional short courses of the remedies prescribed. There had been no return of the alternating paralysis.

A somewhat similar case will be inserted in a future chapter (Case CCLXXX.).

HYSTERIA very often depends on imperfect digestion. Indeed, it more frequently may be traced to the stomach than to any other organ of the body. When the morbid state has thus taken this direction, the more purely dyspeptic symptoms are apt to decline; or perhaps it is only that they are less noticed.

CASE CCLX.—Mrs. L—, aged 40, has lived a happy married life, having four healthy children, a prosperous husband, and everything she wants. Some years ago she used to suffer from what she called “dyspepsia,” namely, discomfort “like a heavy lump in the chest,” with flatulence, and occasional headache. In 1865 this got well, under Dr. Brinton’s treatment, and then she began for the first time to suffer from hysteric paroxysms, to which she became more and more prone up to the time of her coming to me on April 3d, 1868. She described herself as feeling every nerve of her body, as if they were all tied together at top of her head, feeling the diaphragm rise and the food digesting along the bowels, but always disagreeably, and never with any sensation of pleasure. She also sometimes grew perfectly stiff and cataleptic, so as to be unequal to any muscular act. Seeing a stranger often brought on an hysteric fit, and—*ecce signum!* off she went into one as she sat there, screaming and sobbing, the tears pouring down from her red streaming eyes. Being lame, I could not rush off in search of cold water; and so I used Dr. Hare’s plan of stopping the patient’s breath, and insisting then on a full inspiration being drawn. It is an excellent expedient.

R.—Tinct. valerianæ co. flʒij, ex aquâ ter die.

A cold shower-bath at noon daily, preceded by a walk, and followed by luncheon.

CASE CCLXI.—H. J—, a dentist, of middle age, came to consult me on March 17, 1868, about occasional attacks of vomiting and gastric and intestinal flatulence, with a few other dyspeptic symptoms, induced by his professional confinement to the house. While I was examining the epigastrium I was startled by his giving a number of convulsive gulps; looking up, I saw his eyes filled with tears, and his throat swelling with *globus*. He was evidently going off in an hysterical fit. I instantly seized his nose, and desired him perempto-

rily to draw a deep breath. The inspiration restored his voluntary control, and he was able to tell me that he not unfrequently of late had regular paroxysms of that effeminate complaint. I prescribed a draught of quinine and strychnine, with three drops of laudanum and six of chloric ether twice a day.

FLUSHING OF THE FACE, or causeless blushing, is a functional nerve disorder of the circulating organs closely connected with palpitation of the heart, which has been already noticed. The two symptoms will generally be found in the same patient.

CASE CCLXII.¹—Mrs. R—, aged 56, put herself under my charge in June, 1866, stating that for the last half-dozen years—in fact, since the cessation of the catamenia—she had suffered from flushings of the face at irregular times, accompanied by palpitations of the heart, so severe that she thought that organ must be organically diseased. On examination, I found it healthy in all respects.

On inquiry, I elicited that she suffered excessively from intestinal flatulence, especially of an evening, and not uncommonly had heart-burn at night, if she ate pastry or took sugar in her tea.

When she came to me she had been latterly much worse than usual, and this I traced to annoyance about a love difficulty of her favorite son.

A month's course of quinine and strychnine twice a day dissipated gradually the inconvenience she suffered.

A higher degree of the same phenomenon constitutes ERYTHEMA NODOSUM, of which an instance was cited in Case CCXXVI.; and closely allied to this is NETTLE-RASH, which is always partially traceable to the stomach, as is shown by the relief afforded by a change of diet, a change sometimes seemingly insignificant.

CASE CCLXIII.²—Miss C. R—, aged 35 or 40, was a patient of mine in the summer of 1866 for nettlerash, which for the last six years had made her mornings miserable to her, coming on in her legs directly they are put out of her warm bed. She had tried all sorts of treatment in vain; nothing seemed to do her any good. The chief things which make her worse are being worried, and getting wet through when riding.

I have given her soda, liquor ammoniæ, &c., without any apparent effect; but what really seems to afford the greatest relief is leaving off all alcoholic liquids, tea, and fruit.

CASE CCLXIV.³—R. V. E—, aged 50, a commercial man, requested my advice in February, 1858, about a peculiar itching papular eruption. Observing that it ran in straight lines, and was only in the

¹ Case CCLVII. in 2d edition.

² Case CCLIX. in 2d edition.

³ Case CCLVIII. in d edition.

front parts of the body commanded by the hands, I questioned him further, and found that it only appeared when scratched, and in the morning assumed the form of "wheals." He confessed that eating pickles and drinking hard beer used to bring on these "wheals," but that he had for some time carefully avoided all acids. The only unnecessary that I could detect among his "non-naturals" was the use of tobacco. He allowed that strong shag, in which he indulged, certainly did somewhat upset his stomach and make his hand shake.

Leaving off smoking at night, and using only light cheroots by day, cured him, with the help of a little liquor ammoniæ. His nettlerash got well, when his nerves and his stomach returned to their duty together.

That nettlerash is a phenomenon connected with imperfect innervation I have the evidence of the following personal experience. A few years ago I was unfortunate enough to have a popliteal aneurism. When this came to press habitually upon the nerves of the ham, of which my sensations gave me due notice, I remarked that bathing in cold water brought on nettlerash, invariably confined to the affected leg only, and never since suffered from.

Now, when an individual has a nervous system less powerful than the rest of the body, let them be females, feminine men, or men with habits debilitating to innervation, any gastric derangement is liable to bring on nettlerash among other symptoms, just as the cold water brought on nettlerash in the leg whose innervation was partially cut off. That is my theory, and that is why I introduce nettlerash in this somewhat unusual connection.

In the next case the eruption on the skin, though clearly dependent on the digestive organs, was not of such a character as to be correctly called nettlerash; it was rather an "Erythema circumscriptum." (I presume in cutaneous pathology one may be allowed to invent a nomenclature that best suits the case in hand, inasmuch as no one treats the patient in obedience to the nomenclature.) The depression of spirits and causeless fears point out that connection of the pathology of the case with the nervous system, which I have alluded to above.

CASE CCLXV.¹—W. L.—, a country gentleman of 62, of robust jovial aspect, square set and muscular, comes of a gouty family; but he has never developed in his own person his *damnosa hereditas* in its typical form, having never felt any swelling or pain in any of the joints or tendons. He placed himself under my care on the 15th of

¹ Case CCLX. in 2d edition.

May, 1867, on account of attacks of which the following is the usual course. About every three or four weeks he finds a dreadful depression of spirits comes over him, without any cause or previous excitement; the urine becomes excessively copious and pale colored, and is passed with great frequency. Then commences gastric flatulence, the air bursting up from the stomach in such quantities as to wake him up at night; and at the same period the heart thumps against the ribs with extraordinary force and frequency. The appetite is quite lost, and disgust to food takes its place. But there is considerable thirst, and the tongue is furred, clammy, and dry. The urine now gets scanty, and as high colored sometimes as porter, but never thick. Then he begins to bring up clear fluid from the mouth nearly every hour in gushes of several ounces at a time. The fluid is always sour, and after meals is intensely so to the taste. These attacks have ordinarily ceased in about four days, and the convalescence from them is almost always announced by a peculiar eruption on the skin, especially on that of the belly and legs. Sometimes they last longer, and notably on the occasion of his first coming to my house he had been ill off and on for three weeks, occasionally having a remission, but never quite free. When I saw him the tongue was much furred, he had no appetite, and had been throwing up the acid fluid already that morning. In spite of a round red face he really had the aspect of great mental distress, quite incommensurate with the degree of pain experienced. In spite of the depression of spirits his mind was quite clear, and capable of business (if he had any), and there was no vertigo or headache. During the three weeks he had lost fifteen pounds in weight. The epigastrium was very drummy on percussion, the resonance stretching to an abnormal extent from side to side, so as to show a very large stomach. The belly however was flat, though he is a broad dumpy man. I prescribed (May 17th, 1867)—

R.—Quiniæ sulphatis gr. ij,
 Strychniæ hydrochloratis gr. $\frac{1}{20}$,
 Succî limonum quant. suff., ad illa solvenda,
 Aquæ ad fl̄j,
 Potassii iodidi gr. iij; bis die.

R.—Pilulæ aloës cum myrrhâ gr. iv,
 Strychniæ hydrochloratis $\frac{1}{25}$; omni nocte;

and desired him to call again in four days. He was advised to take no stimulants at all.

On the second visit I had an opportunity of seeing what he had described as the convalescence from his attacks. He reported that with each dose of the medicine, from the time of beginning its use, he had felt relief. The flatulence and ejection of sour fluid had ceased; and on the second day his appetite returned. He had celebrated the return of it by eating whitebait and spitch-cock eels, and drinking some weak brandy and water at dinner. The consequence was one attack of the sour waterbrash; but since then he had been free. The urine had become nearly natural. On the skin of the arms and abdomen he showed me spots as large as sixpences of a red erythematous eruption, closely resembling measles. He said it did not itch, but pricked, like what Indians call "the prickly heat."

The next day it was still more like measles, for the centre of the spots had begun to fade while the circumference had spread, like fairy-rings on the green sward.

When the gastric symptoms are purely secondary, or sympathetic to the morbid condition of a distant part, then they are not capable of relief by the remedies which are appropriate for their cure when arising out of idiopathic disorder of the digestive function.

CASE CCLXVI.—Thomas S—, aged 62, had retired from business between two and three years when he came to me on April 5th, 1867. His reason for retirement was his being so much troubled with flatulence at the stomach, low spirits, and general weakness. These evils had increased upon him, and he had latterly begun to throw up his food. He told me that in 1865 he had passed a few urinary calculi about the size of peas, but that since then he had experienced no difficulties in the urinary organs. I gave him quinine and strychnine, and aloes pills. He appears, from his own account, to have got no better; and in the autumn, when I was away for the holidays, he paid several visits to an excellent physician, who gave him bismuth, and charcoal, and soda, and some opiate lotion to put on his belly. He came to me again towards the end of November, thinner, more anxious-looking, more flatulent; though he said the charcoal had decidedly been of service. The urine, when examined, was alkaline, opaque with pus, and of the specific gravity of 1.010 only. He confessed that latterly he had been troubled a good deal with a frequent desire to pass it, and pain in the urethra during its passage. This accounts for the obstinacy of the gastric symptoms.

CHAPTER X.

CAUSES OF INDIGESTIONS.

SECTION 1.—Eating too much. SECTION 2.—Abuse of alcohol, opium, tobacco, tea. SECTION 3.—Inaction of body. SECTION 4.—Inaction of mind. SECTION 5.—Exhaustion of body. SECTION 6.—Exhaustion of mind. SECTION 7.—Eating too little. SECTION 8.—Climate. SECTION 9.—Disease of the lungs. SECTION 10.—Compression of the stomach. SECTION 11.—Abuse of purgatives.

SECTION I.

Eating too much.

I do not know of anything which more excites our wonder in reading contemporary sketches of the social life of our forefathers than the gross manner in which they indulged their appetites. To pass over the bestialities of the philosophic heathen, as recorded by Juvenal and Petronius, our disgust is equally aroused in civilized Christian times by the mighty emperor, warrior, and statesman Charles V. washing down his six or seven daily meals, his supper at midnight and his heavy breakfast at six in the morning, with great draughts of beer and wine, whether in camp or cloister, or by his saturnine son Philip racking his stomach with enormous loads of pastry till the chronic gastralgia visible in his countenance became a prominent feature in his portraits. While painters of social life, from Chaucer to Le Sage and Smollet, with a hearty appreciation of all that is human, exhibit an equal coarseness in the habits of our middle classes. The reader of such unconscious records of deficient control over the animal propensities does not wonder at theologians and physicians both preaching the opposite extreme, and placing abstinence in the niche sacred to temperance. Habitual gluttony is as rare now as it was common in the days of old. An occasional careless excess in the pleasures of the table may be indulged in, but people feel it to be an excess, promise themselves that it shall be only occasional, and do not go to a doctor for its consequences. It suggests and often spontaneously

carries out its own cure, and the shame which accompanies it causes the "remorse of a guilty stomach" usually to be concealed. So that I have no notes on the subject to quote.

I can, however, remember two instances where over-eating really deserved sympathy rather than contempt, and I will transcribe one of them here, it being always pleasanter to reflect the bright than the dark side of human nature.

CASE CCLXVII.¹—In November, 1859, I was requested to visit a lady past middle life, who, when I entered her library, certainly looked the picture of robust bloom. "Dr. Chambers," said she, "what is a British matron to do who habitually eats too much?" The question suggested the shortest of replies. "Aye, it's very easy for you to say 'Dont;' but, if I didn't, I should be a widow in a week. You know how old and infirm Lord C— is. He has always been used to feed highly, and if I cut the dinner short, or did not encourage him by my example, it would be his death." It seemed that the symptoms of eating too much were a want of sleep during the night, feverishness in the morning, a sort of worrying fidget in the bowels, sometimes followed by constipation, sometimes by fetid semi-liquid evacuations, never by natural motions, frequent headaches, and a tendency to depression of spirits. Sometimes she was attacked in the night by what she called "spasms," that is to say, severe pains in the epigastric and umbilical regions. If that ended in vomiting she experienced rapid relief, and was better than usual for several days.

My prescription was an aloës and myrrh pill before dinner daily, and a recommendation of a dry diet as mixed and varied as possible, avoiding only soup, slops, butter, and fat. But I doubt if it was quite successful, till the exciting cause of this virtuous intemperance bore his many years and honors to the grave.

I question if my recommendation of a mixed diet was wise. It would have been better for her to have taken a preponderance of meat one day and a preponderance of vegetables another, but more generally the latter.

Few exceders have such a good excuse for their violation of the rules of propriety, and most ladies would with reason suppose themselves to be laughed at if asked, "'Is it for fear to wet a widow's eye' that you eat so much?" Patients seldom have the discernment shown by the last named in recognizing the habit which is the cause of their ill health; but they are ready enough to give it up when brought to see that they are committing a contemptible excess.

¹ Case LX. in 2d edition.

The robust and educated intellect shown in the previous case gains strength by resistance, but in a weaker vessel the mind gives way, and mental inability follows, as in the next instance.

CASE CCLXVIII.¹—Mrs. L—, aged 32, the wife of a rich manufacturer, in the spring of 1860 complained of a weight and distension felt at the epigastrium half an hour after meals, and lasting for several hours. It was followed by eructations or returns of small quantities of food, not sour, and not accompanied by flatulence. The bowels were loose, the motions never formed, but ragged, and sometimes diarrhœic. There was a nasty taste in the mouth in the morning, feverish and restless nights, and frequent dull headaches, with low spirits and “*hysteria*.” The catamenia were irregular and somewhat profuse. She said that these symptoms had commenced nearly two years previously, when her husband had some pecuniary troubles. I questioned her strictly as to keeping up her spirits by indulging in alcohol at that time or since, and was led to believe her not guilty. But she confessed to having become very fond of good eating, and having a great appetite for anything “nice.” She was a large-framed woman, and comely, though her outline was growing rather out of drawing.

The error in diet which in a woman produces hysteria, in a man declares itself by melancholy.

CASE CCLXIX.²—Richard R—, aged 48, a white-faced and fat clerk, came to me in November, 1866, persuaded that he had diseased heart by the palpitations of that organ which he experienced, especially in the morning. He had lost his interest in life, having succeeded in obtaining a comfortable income more than sufficient for his wants, and having laid by a provision for old age. He was passing a drab-colored existence, taking no pleasure, following no hobbies, and occupied only with the routine of his office and attention to his health. Of the latter he had a bad opinion, and considered that he was delicate and required abstinence from excitement and constant support. Besides his regular meals he was in the habit of taking a slight anticipatory luncheon at 11, an intercalary snack at 4, preparatory to dinner at 6, and a small refresher along with his glass of grog at bed-time. The consequence was sleepless nights, flatulence of stomach, palpitations of heart, returns of small quantities of food by the œsophagus, irregularity of stools, increased obesity, and desponding views concerning time and eternity. To his great terror, I made him go quickly up and down stairs, and examined the heart, the sounds and beat of which were quite natural after this natural excitement. But the stomach was large, and gave a drummy sound on percussion, quite up to the apex of the ventricle. A counsel to leave off bacon at breakfast, to eat only at meal-times, and a short course of hydrochloric acid, made a new man of him.

¹ Case LXI. in 2d edition.

² Case LXII. in 2d edition.

CASE CCLXX.—Robert T—, aged 50, a bachelor member of a gouty family, had lived a very hard-working, responsible life in the West Indies, till a few years before he consulted me in October, 1869. He was then preceded by his brother, who told me that all the family were becoming very anxious about their relative, from the fixed melancholy which seemed to be taking possession of him. I took the opportunity of making minute inquiries as to his habits in respect of alcohol in early life, and found they had been really temperate. During a quarter of a century passed in a small West Indian island, he had experienced no illness. But he was in the habit of working very hard and eating very largely at all meals. The first habit fortune, with cruel irony, had exempted him from; but the second he had continued. He felt weak and depressed, and thought it necessary to support life by four meat meals daily. He himself told me that his reason for giving up business was a painful want of decision, increasing with the importance of the subject under consideration.

R. T. had not got at all stout, indeed, he said he thought his waistband was looser than of yore.

His bowels were inclined to be loose, and the stools of irregular consistence. His sleep was disturbed.

I advised him cutting down his daily allowance to two meals of meat, and one of vegetable food, and prescribed some strychnine and henbane. He then proposed taking a trip to South America, as an aid to adherence to his dietary, and I hear he is much more cheerful.

How easily such persons as these might be turned into hypochondriacs, or lunatics, by coddling and sympathizing!

If Richard R— had really got a diseased heart, I should have given him probably a treatment not very different in principle, but I should have especially cautioned him against gorging himself even at meals. For now and then cases occur like the following.

CASE CCLXXI.¹—John B—, aged 71, a cheerful old gentleman, came to me in May, 1852. He said he had always taken great care of his health, but had not consulted a medical man since he had rheumatic gout, at fifteen years of age. His reason for taking care of his health had been a tendency to shortness of breath, which he said he had experienced so long ago as the beginning of the century, when reading Shakspeare to the young ladies of the period. Examination of the heart showed it to be very weak, irregular in time and strength, with a confusion in its valve sounds, and a dulness on percussion extending four inches in width, from the epigastric across the cardiac region. The pulse at the wrist was equally weak. He had always enjoyed his table, but latterly had found that taking the quantity requisite to satisfy him oppressed his chest and made him faint. Nobody could discern better than the patient himself the true

¹ Case LXIII. in 2d edition.

pathology of his case, nor give better advice than his own reason suggested. But unfortunately he was not able to follow it, for a few weeks afterwards I had a letter from young Mr. B—, saying that his father had eaten heartily of an indigestible mixed dinner, and lay back in his chair dead.

It very often excites the astonishment of these patients, after having it explained to them that their danger lies in over-eating, to be told to increase the number of their meals. Yet such is in most instances the best way of meeting the case. Small quantities frequently taken are the best device for introducing a full supply of nutriment without overloading the alimentary canal. During the day, four hours is the longest time that an invalid should be allowed to pass without eating something; and for some two hours is a sufficient interval. Very soon the appetite begins to accommodate itself to these habits, and the little meal that is committed to the stomach at once, instead of lying dormant in the paralyzed organ for hours, as was the case under former customs, is enabled to pass away rapidly.

The excess in eating is not uncommonly rather relative than positive. It would not be an excess under normal circumstances, but is made so by those present. Examples are given in Cases V., VI., VII., where an ordinary meal was an excess under extraordinary temporary circumstances. The following is a chronic result of a chronic cause.

CASE CCLXXII.¹—T. J—, a lawyer, naturally inclined to be corpulent, aged 52, was well till October 1865, when he sprained his ankle rather severely. He was always used to a good deal of bodily exercise, and of course in his profession equally employed his mind; so that it was not to be wondered at that he habitually fed largely. This did him no harm till the accident to his leg, after which he began to suffer from indigestion. The bowels were costive, and the stools never homogeneous, but consisting of rags of solid matter in much fluid; he had acid rising in the mouth, eructations, wind rolling about at night in the intestines, and breaking off per anum in the morning. What most distressed him and brought him under my care was want of rest at night. He either could not sleep at all, or else woke up after a short nap and could sleep no more. Opiates had made him worse. Worried in this way, he had lost two stone in weight in the last six months since his illness began, and appeared to have been striving to replace the loss of flesh by keeping up his usual high feeding. But analysis of the urine showed that there was no

¹ Case LXIV. in 2d edition.

lack of active metamorphosis going on, for it was at all times of the day fully acid, clear, and with a constant specific gravity of 1.024 to 1.025, varying singularly little with circumstances. He was nervous and irritable, and, like all nervous people, had a smooth, white tongue. There is small doubt but what a return to active habits would have restored his usual health, but unfortunately some remains of lameness precluded it. He was astonished when told he ate too much, and doubted if that was possible when a man was losing flesh. But experiment proved to him what the symptoms led me to pronounce, namely, that the ingesta were in excess of what was required for the nutrition at that time, though they were not too much for him when he was living more actively.

In this instance the headache which frequently accompanies excess of mixed diet was absent.

The remark that the dyspepsia of excess is accompanied by loss of flesh in some instances is interesting, and is for practical service in enlightening us as to the treatment of a peculiar kind of diarrhoea of pultaceous stools, accompanied by much irritability of temper and emaciation, which is found not rarely in over-coddled children. The loss of flesh makes some persons think them underfed, when in fact on cross-examination it is found that they are overfed, and a restriction of the diet is followed by improved condition.

Indigestion, however, does not prevent corpulence. In thirty-eight cases of obese persons, which I printed in a tabulated form some years ago,¹ five of the number suffered in this way. In fact, it is not impossible that one cause of that hypertrophy may be the delay of the victuals, both animal and vegetable, in the stomach, and the setting up in the carbonaceous material of a fatty fermentation instead of digestion. This obesity of persons with weak gastric digestion is peculiarly distressing; the defect in muscular power prevents the use of exercise for a time sufficient to prevent its increase, and hence it becomes a daily growing inconvenience. The encroachment too of the adipose upon the other tissues, and the dilute spread of the insufficient blood through an unnaturally large quantity of capillaries, tend to produce atrophy of important parts; and hence we find as consequences of corpulence, dilatations, and degenerations of the heart, fatty deposits on the same, Bright's kidneys with dropsy, &c. The addition of many pounds to the

¹ "On Corpulence," p 139. London, 1850.

body in the shape of fat, requires certainly a very large, although not perhaps a proportionate, addition of blood and of bloodvessels to nourish it; yet the same heart has still to undertake this extra labor. The balance then between the systemic and the pulmonary circulation must be destroyed, and the lungs be unequal to the excretion of so much more carbon than they were intended to provide for; hence the blood becomes more venous, more liable to form congestions, and to dilate the yielding walls of the heart by its retarded pace. The effect of diminished circulation in also producing degeneration of other parts need not be enlarged upon.

CASE CCLXXIII.¹—Mrs. H—, a very stout lady nearly sixty years of age, came to me in June, 1852, to consult principally about her obesity. But I found her a martyr also to gastric dyspepsia, which produced a feeling of emptiness only to be relieved by taking food. This over-eating increased her dyspepsia, so that she had a constant diarrhœa, and frequent vomiting. Yet with all this her corpulence increased more and more. Restriction of diet relieved her stomach symptoms considerably, but her bulk was unreduceable. I believe the cause of her death some years afterwards was pneumonia.

The symptoms usually attributed to “gouty” dyspepsia seem to me to be due to eating too much. Gouty people have usually strong appetites, and if they indulge them, are liable to the symptoms here described. If they do not indulge them, they do not experience dyspepsia.

SECTION II.

Abuse of Alcohol, Opium, Tea, Tobacco.

The immediate effect of diluted alcohol on mucous membranes is first to dry them by staying the aqueous exhalation, and very shortly afterwards to damp them with an abnormal formation of mucus, to retard the capillary circulation, and to deaden the sensibility of the nerves. The last action is its use. Where there is risk to health from undue sensitiveness, alcohol in moderation is an invaluable remedy. It may be considered as an antidote to the wear and tear inflicted on the body by the mind, the symptom of which is exhaustion, over-sensitiveness of normally insensible parts, or, in extreme cases, actual pain; and if a man must follow the usages of civilized life which entail that exaggerated wear and

¹ Case LXV. in 2d edition.

tear, he cannot do better for his stomach than counteract part of their evil effect by taking moderate doses of fermented liquors.

Alcohol is equally antidotal where the labor is not excessive indeed, but the sensitiveness is the manifestation of innate or acquired weakness in the nervous system, which cannot sustain normal work. And thus it becomes the daily food or physic (I care not which it be called) of nearly all whose daily life is one of nervous activity. Experience has led to the same conclusion as science.

To the health of the perfectly strong man the moderate use of alcohol is probably quite indifferent. One day he may want a little, and therefore be the better for it; another day he would be in a more perfect condition without it. So a balance is struck by the habitual user; and his chief argument in favor of fermented liquids remains the unanswerable one *that they are nice*. This is *luxury*.

But to the less robust they much increase the chances of surviving to the normal threescore and ten. This is *use*.

If, however, sufficient interval be not allowed between the doses for the alcohol to be all cleared out of the body, and the nerves to have leisurely recruited themselves; then a continuous arrest of active function is established—a permanent partial death or disorganization. This is *abuse*.

The effects of the abuse of alcohol on the gastric area is the same as on the rest of the body, aggravated by the fact that it is in immediate, and therefore active contact with the mucus membrane at an early period of ingestion. A partial paralysis of both muscular and special secretion is induced; the digesting mass is slowly rotated and slowly advanced, and instead of the more perfect product gastric juice, the half-living, stringy mass is mixed with the food. The habitual toper loses his appetite for nutritious diet of meat or succulent vegetables, and fills his stomach, like the prodigal, "with husks."

Soon the glandular structures degenerate, and they are followed by the degeneration of all the tissues, whose purposes they subserve.

The yielding of the walls of the stomach from the constantly induced paralysis of the muscular coat, and the loss of elasticity in the degenerating tissues leads often to dilatation, as in the following instance.

CASE CCLXXIV.¹—Mr. F—, a burly farmer of middle age, came to me in December, 1856, complaining of a constant sinking at the epigastrium, relieved indeed for a short time by taking food, and partially by a glass of spirits. He ate, however, without appetite, and did not even enjoy his brandy, for it had become a mere matter of supposed necessity with him. Latterly animal food caused disgust and nausea, his bowels, from being costive, had become relaxed, with yeasty fermenting stools, and he had got very down-hearted about himself. The condition had, however, been coming on very gradually he knew not how many years, and he was without difficulty brought to see the connection it had with a habit of taking spirits between meals.

The tongue was coated with patches, showing sharp defined edges, of epithelium on a bright red base. It was described as being more generally all red, like a beefsteak. The tympanitic resonance on percussion of the stomach extended right up into the cardiac region and down nearly into the navel, and laterally in proportion; and the abdomen was prominent as well from accumulation of fat in the omentum and parietes.

I put him on a Banting diet, with at first some liquor potassæ to decrease his corpulence, and I ordered fifteen grains of Boudault's pepsin powder to be taken with animal food to assist in its digestion. I persuaded him also to promise that no spirituous liquor should be taken between meals; but he said he had sooner die than surrender a glass of brandy-and-water at supper.

I must confess I had some doubts about the observance of the promise. Yet I was wrong; he did leave off spirits, and he did get much better and more active in business, and continued so for nearly two years. Then some temptation arose, he resumed his old habits, and was brought up again to London in 1858, in the same state as before. The same advice was given, but I have no record of the result.

Persons with dilated stomachs are very apt to become obese, though the flesh digested is not sufficient to sustain the muscular strength. And this sort of obesity is very difficult to manage, from the impediment which the muscular weakness offers to taking exercise.

This dilatation is often accompanied by flatulence both of a gastric and of an intestinal character.

CASE CCLXXV.—*August 31st, 1858.*—Edmond C—, æt. 48, a veterinary surgeon, suffers excessively from flatulence both by night and day. The wind almost always breaks upwards in eructations, but sometimes rolls about in the bowels. The stomach is very tympanitic on percussion. He has lived a wholesome life, except that he has lately got into the habit of taking small doses of spirits

¹ Case LXXXVIII. in 2d edition.

between meals. To this habit his indigestion seems due, for if he leaves it off he is much better, but then he says he cannot sleep.

The dilatation of stomach is also sometimes accompanied by that spasm of the œsophagus which constitutes waterbrash.

CASE CCLXXVI.—Mr. S—, a stout weather-worn farmer of 50, was sent to me by a medical man who, being a relative and old friend of his, found, as is so often the case, that his advice was neglected, and wished the patient to hear an unbiased opinion. The complaint was that half an hour after eating almost every meal there was an ejection from the throat of a greater or less quantity of frothy fluid, void of taste or smell, and never accompanied by any food. There had been recently a considerable accumulation of fat in the abdominal parietes, and the epigastrium was tympanitic even to the left of the splenic region. There was a tightness felt across the chest, but that was neither the better nor the worse for the waterbrash. There was a want of sleep at night, which seemed to the patient's sensations total, but was probably really much disturbed and dream-haunted rest. He attributed this state of things solely to his illnesses in the spring of 1867, namely, a carbuncle and the fracture of an arm. But a peculiar watery look in his eye made me suspect that excess in alcohol was the origin of his malady, and failing in eliciting from the patient himself evidence of this, I wrote to his doctor and friend, and found such to be the fact; though the punishment had not in truth come till after the illnesses above named.

I prescribed (December 2, 1867) quinine and strychnine twice a day, a small dose of opium at night, and abstinence from all alcoholic liquids. I saw him again several times during the month, and he lost his heartburn, but was still wakeful at night. I fear he did not remain temperate.

This local injury to the upper part of the alimentary canal may go on for a short time without the general health being apparently affected.

CASE CCLXXVII.—George S—, aged 44, had been engaged many years in the sale of wine by auction, and that has led to such a constant sipping and tasting, and experimental recommendation of mixed liquors, that he may be said to have lived in an atmosphere of alcohol and vinous ether. He has, however, never been in the habit of exceeding with jovial intent. He has a fresh, but rather too full colored, face; and all functions of life seem healthily performed, except those of the upper part of the digestive canal. For upwards of twelve months he has had almost daily, immediately on rising in the morning, a pain running up the back of the sternum from the left side of the epigastrium, followed by the ejection of several ounces of fluid, generally tasteless, but sometimes bitter flavored and tainted with bile. On such latter occasions there is more effort, or straining in the ejection, which the patient calls vomiting. This waterbrash will

sometimes occur about an hour after a meal, but as a rule it is confined to the early morning. Food is never ejected. There is a little pain on pressure at the cardiac end of the stomach.

Advised (January 25th, 1868) fifteen grains of subnitrate of bismuth every night on going to bed, and a draught of quinine and strychnine twice a day. No other stimulants, save a few glasses of sherry at dinner to be taken.

But when once the appetite is injured, then emaciation takes the place of obesity or burliness, and the patient goes down hill with great quickness.

CASE CCLXXVIII.—I was requested by a large firm to see one of their young men, whose health appeared to them breaking up altogether, and whose services they should be loath to lose, as the fact of their incurring the expense of putting him under a physician sufficiently demonstrated. Yet really the view of him did not exhibit an agent much worth having. Shambling, undecided, and frightened, he seemed the last man capable of dealing effectually with a customer. It was the drink that had done it, he allowed without reserve when so accused; but he had never had delirium tremens completely, and had never got drunk, but had taken half-tumblers of ale often during the day, and a sip now and then of whatever liquors customers chose when giving a large order. A grave, puritanical sister protested against this being considered a sinful excess, but it was, and the victim confessed it. What was more, I was enabled to persuade him to forswear it at once and to be a tee-totaller for three months at least. A longer engagement we could not attain to. For in truth he could see that he had spoiled his digestion and was starving for want of due nutrition. He could take no breakfast for the morning nausea and vomiting, he had no appetite for his other meals, and when he took them they either lay like a load at the epigastrium, or else gave him pain lower down and brought on diarrhœa.

I advised his doctor to give him half a grain of opium every night and a draught of quinine and strychnine twice a day.

He came to me two months afterwards much improved.

In women, perhaps from the restraint of the dress, the stomach does not so often become dilated. The following case represents the more common injury done to the viscus by alcohol.

CASE CCLXXIX.¹—Mrs. P—, aged 33, came under my care October 3d, 1864. She lived in the country in easy circumstances, had no family or society to attend to, and had become lazy, fat, flatulent, and low-spirited. For several years she had been gradually getting into the habit of alleviating her uncomfortable sensations by small doses of brandy, which she took morning, noon, and night, but never in such a quantity as to get into her head. The reason of her coming to

¹ Case LXXXIX. in 2d edition.

me was inability, which was growing upon her, of keeping the smallest quantity of food upon her stomach. It was vomited almost immediately. She was very hysterical, and the catamenia was irregular. Leaving off brandy and taking some valerian and shower-baths stayed the vomiting in about a month; but two months afterwards I was obliged to go abroad, and lost sight of the patient.

The quantity of alcohol needs not to be large for it to affect the nervous system and stomach, so that it be taken in continuous doses. The following case of joint paralysis of the two together is attributable to doses really harmless, if they had been drunk only at meals.

CASE CCLXXX.—J. W—, a well-built broad-shouldered public singer, aged 42, in 1865, after performing at Drury Lane Theatre on an occasion of much interest to him, came home and ate a large supper of cold pork, went to bed, and awoke next morning with a desire to go to the water-closet. Proceeding down stairs on this errand, he suddenly found he was paralytic in the left arm and leg. He managed to hop up stairs to bed again and sent for a doctor. In a short time he vomited copiously, and then the motion of the arm and leg returned in some degree, but it was a month before he regained complete use of them. During that month he was excessively hysterical, laughing and crying with very small or no reason, and having inexplicable choking sensations in the throat. He had no headache, confusion of thoughts, palsy of tongue, or any other evidence of a cerebral origin of the paralysis.

The reason of the nervous system yielding to what may seem an insufficient cause in this case, was that it had become chronically debilitated by rather more frequent doses of alcohol than it was able to bear. J. W. was brought to consult me in June 28th, 1867, by his medical man, Mr. Lloyd, of Bermondsey, to whom I am indebted for the previous history; and the symptoms then exhibited left no doubt on my mind that alcohol was to blame for the ill-health from which he had long suffered. He complained of feelings not unlike those of Herr. v. J. (see Case CCXXXVII.) when walking in the street, and if the stomach was empty at the time, there came on a pain in the splenic region, excessive muscular weakness or inability to move, and an instinctive ravening for food. Taking food relieved these feelings forthwith: but he usually bolted it so hurriedly that it disagreed with him afterwards, causing pain at the epigastrium.

It happened that his allowance of stimulants was not more than three pints of ale and half a pint of brandy per diem; but he took this in the worst possible fashion, that is to say, in many small divided doses, beginning soon after a light breakfast and taking a little when he felt to want it. He never gets intoxicated, and has not done so since boyhood.

I advised him to leave off all stimulants, except ale at dinner, to take a shower-bath and two doses of tincture of valerian daily, to avoid tea, to eat in company and slowly.

Associated with dyspepsia from the abuse of alcohol, there is sometimes, especially during the attempt to leave off the bad habit, found a peculiar neuralgic rheumatism. This has been noticed by Mr. Higginbotham in a paper in the *British Medical Journal* for January, 1868.

CASE CCLXXXI.—Though a British subject, Joseph B— has been for many years engaged in trade in the United States, and during the greater part of the civil war was at St. Louis, a very centre of excitement. He indulged widely, but not deeply, in spirit-drinking; I mean taking a sip here and a sip there, a glass with this man and a glass with that, but never being intoxicated. And of course he bolted his food and overworked his brain in such a place at such a time. He suffered from pains in the stomach after food, but he blunted them with nips of raw spirit. At the age of 43 he began to break down; he had attacks of vomiting lasting for twenty-four hours, and recurring at varied intervals from a week to a month. He had also occasional hemorrhage from the intestinal canal. The attacks of vomiting were usually preceded by constipation. What, however, troubled him most when he came to me in January, 1868, was a *pain in all the limbs resembling chronic rheumatism, only not affected by temperature as chronic rheumatism is*. He had entirely left off alcoholic stimulants, and had been at a respectable hydropathic establishment for six months. While there he had a crisis, consisting in an eruption of sores all over his body. His pains were no better and he was weaker, but since leaving off alcohol the intervals between the attacks of vomiting were longer. He was excessively pale, and had the thin figure and stooping shoulders vulgarly assigned to all Americans; but beyond that could hardly be called emaciated.

As he had a dull pain in the right side I examined his liver and found its dulness small in extent, not reaching to the edge of the ribs. There was no pain on pressure of the epigastrium or hepatic region.

He had not knowingly taken any active medicines, having been under only homœopathic treatment.

When a patient is persuaded to give up dram-drinking, he often has such a dreadful depression of spirits that his resolution is apt to give way, though he is convinced he is acting right. He may even have a kind of delirium tremens from the sudden shock, before he can get into the temperate habit of taking stimulants only at dinner, or of giving them up altogether, according to the nature of the case. Still, it is best to enforce the absolute rule of no alcohol between meals, and to supply its place temporarily by an ether and ammonia draught, then by ammonia, either alone or with a bitter, and then to stop it altogether.

The sudden leaving off excess of stimulants will also often cause

a sense of uneasiness in the epigastrium, associated with a disturbed cardiac action, even when the severer gastric symptoms are relieved by it. Patients should be warned to expect this.

CASE CCLXXXII.¹—Mrs. B—, an elderly lady habitually rather short-winded, came to me on the 26th of October, 1864. She was suffering from loss of appetite, with frequent nausea and vomiting, which I attributed to a habit recently acquired of taking brandy between meals. The pulse was then regular. I urged her to give up the dangerous habit forthwith, and saw her again on the 2d of November. The nausea and vomiting had ceased, and she felt some return of appetite. But she had a new sensation of sinking at the epigastrium, and was shorter of breath. On examination of the pulse I found it irregular and intermittent. The heart-sounds were normal. I gave her some valerian, and on the 18th found her still bravely resisting the temptation to brandy, and dismissed her with a prescription for some quinine and strychnine.

I am used to quote to such patients as the last *in terrorem* an experience I once had of want of resolution in breaking off dram-drinking—an experience happily rare, and not cited here as illustrative of a class, but still instructive as an extreme warning.

CASE CCLXXXIII.²—In September, 1857, I was called by Dr. Jephson to a consultation in the case of an unfortunate middle-aged woman, who was dying, prostrated by uninterrupted vomiting. It is needless to detail the symptoms, which were those of simply retching and sinking, and the nature of the case was made apparent by her desiring her maid to bring her a glass of brandy even while I was speaking to her. Our attempts to feed her with beef-tea enemata and opium were unavailing, and she died next morning.

She told me the habit had been acquired only the previous year, while staying with some friends in Scotland at their shootings, where a nip of whiskey was the regular preparative for breakfast.

But dram-drinking is by no means confined to uneducated persons, those whose “talk is of bullocks,” or to idle women. I am ashamed to say I have been consulted about its consequences by several members of our own profession, who ought to know better and set a better example. *Quis custodiet ipsos custodes?* They tell me the temptation is very great in country practice, sitting in tedious conclave in lone farmhouses during a lingering labor, or watching some long-dying patient with no person that can understand your thoughts within many miles. There is nothing else to do but drink; and then the next day you have to be at work at the usual

¹ Case XC. in 2d edition.

² Case XCI. in 2d edition.

early hour, and the work can hardly be done without a hair of the dog that bit you.

The last sentence, expressing the necessity for staving off alcoholic reaction, reminds me to mention a test which I am used to apply to discover whether the amount of alcohol taken is such as really to injure the stomach. I ask whether the patient ever is in the habit of taking it in the forenoon. If so, I at once feel sure that the stomach has suffered. When a considerable interval intervenes between the indulgences, and the reaction is allowed to have its way till ordinary digestion is restored, the constitution may very often be still uninjured. But I have not yet met with a forenoon tippler, even though he never got drunk in his life, without a condition of stomach which must infallibly shorten his days. I find it a great advantage in the selection of lives for insurance to substitute a pointed question on this head for the usual aimless inquiry whether the proposer is "sober and temperate." Nobody is anything else, of course; and the answer is a mere declaration of opinion. But "Do you take spirits in the forenoon? Is that a habit?" require categorical statements of facts, which, if wilfully false, would vitiate the policy.

The way in which life is shortened by this stomach affection is generally secondarily through the liver, originating anæmia and ascites: sometimes through the pancreas; when the emaciated gin-drinker, such as Hogarth drew, is produced. More rarely the kidneys break down, and Bright's disease arises. In fact the nearer, physiologically speaking, the organ to the stomach, the more likely it is to suffer.

What has been already intimated of alcohol, will apply also to opium, namely, that when it is given medicinally, that is, for the relief of certain bodily or mental pains, and when it succeeds in relieving those pains, it does not seem to produce its special toxic effects—*where it is really wanted it never does harm*. For instance, in inflammation of the serous membranes, as pericarditis, I have given to young persons who never took it before as much as three grains every three hours, without producing constipation or oversleepiness till such time as the inflammation had subsided. (See "Lectures Chiefly Clinical," Lect. XV., "On Pericarditis.") Of course I did not arrive at this quantity all at once, but began with

a grain or a grain and a half, and increased the dose gradually though rapidly.

The most serious objection made to its use is the difficulty experienced in leaving it off when the occasion has passed away, and when consequently it has begun to tell on the health. But this difficulty has been very much exaggerated, as well as the temporary pleasures of indulgence, from the task of description having fallen into the hands of the imaginative De Quincey—a man whose world was in himself, and whose whole biography, when afterwards published, let us into the secret of “The English Opium-eater” being really a work of fancy. The same may be said of Coleridge’s “Recollections.” I find in my notes a special memorandum of the scorn with which the difficulty was treated by a genuine strong-minded man:—

CASE CCLXXXIV.¹—During the year 1859 I saw, from time to time, for some trifling ailments of which I have no accurate record, Captain B—, a fine, hearty, God-fearing sailor of the old school, seventy-two years of age. He told me that twice in his life he had been a decided opium-eater, taking as much as a drachm in solid form daily. I expressed my surprise at his having given up the practice, which surprise he did not at all understand, saying, “Why, I should be ashamed of both my philosophy and my religion, and turn sceptic, if either singly would not strengthen me with resolution enough for that.” The occasion for which he took the opium, some trying mental circumstances, having passed away, he diminished the quantity by five grains daily till he ceased entirely; and I must say his constitution appeared none the worse. I heard from his daughter of his being still alive and well at fourscore.

I have myself taken opium for weeks together to obtain relief to the various inconveniences arising from an amputated limb, but I have never felt the slightest temptation to continue its use beyond the necessary period, or any inconvenience from leaving it off. The box stands alongside of my razors, and I do not feel one more dangerous than the other.

It is only in constitutions of a peculiar idiosyncrasy, or when persisted in, spite of rational warning, that opium is seriously detrimental to the digestion.

An occasional effect of the salts of opium on the stomach is exhibited in the following:—

¹ Case XCIX. in 2d edition.

CASE CCLXXXV.¹—Jane B—, a domestic servant, thirty-seven years of age, was under my care at St. Mary's for some painful tumors of the abdomen affecting the uterus and bladder in March, 1861. On account of the pain, she was ordered a grain of acetate of morphia every night. She had never previously had any narcotics. She only took one dose, for that was followed by vomiting, very severe during the night, and recurring at intervals during the next four days.

The possibility of an idiosyncrasy of this sort is no reason for shrinking from the essay of a good and useful medicine, but it is as well to know that it may occur.

The more chronic effects upon the organ are shown in the next:—

CASE CCLXXXVI.²—August 12th, 1853.—George N—, an assistant-surgeon, aged 35, states that for eight years he had been in the habit of taking large quantities of opium. He began the practice in the first instance to prevent his feeling the want of food, when, as a surgeon's assistant, he was obliged to wait many consecutive hours without anything to eat. He at first confined himself to twenty drops of laudanum a day; but he gradually increased the amount till he finished a fluidounce of laudanum daily, and a quarter of an ounce of crude opium in addition weekly. He tried several times to leave it off, but was prevented by the nausea and pain in the epigastrium which he experienced. He had lost much flesh, and got miserably weak; but he probably would have gone on with his poison had he not been frightened by a numbness and partial paralysis of the left arm, and a loss of memory, which made him think he was going to have a stroke, and caused him to put himself under my care.

I immediately restricted him to one grain of opium at night, and consequently found him next day in miserable plight, vomiting, with pain in the epigastrium, and with a most melancholy aspect. I gave him strong beef-tea and port wine, but got afraid next day that he would slip through my fingers and die, and so I added some chloroform draughts. These relieved the sickness. By the 17th he began to get better, and the chloroform could then be omitted. On the 20th he felt very sinking for the want of it, but yet fancied he was recovering his appetite. He was ordered, at his own request, a mutton-chop and half a pint of porter. On the 22d he remarked his memory was improved, and he got up and dressed. Then his bowels grew irregular, and following that lead I was able to restrict the quantity of opium to what he had in some chalk and opium powders, ordered to be taken when there was diarrhoea. By September 1st he was able to leave it off entirely and take care of himself.

It appears from this to be the digestion of meat and fat which is mainly impeded by opium. It requires, however, to be taken in great excess for the effect to be produced.

¹ Case XCVII. in 2d edition.

² XCVIII. in 2d edition.

And even then the result is not by any means immediate. That is shown by the case quoted; and I remember also, in 1838 or 9, a sweeper of a lucrative crossing coming to swear an affidavit before my father as a magistrate that the bearer of the said affidavit was in the habit of using two drachms of solid opium daily. The reason of this measure was that the shop where he was accustomed to deal for the drug had changed hands, and the new-comers refused to serve him with such a dangerous quantity. He was nigh crazy with the restriction, but, armed with his legal document, he felt safe for the future, and I used to see him at his post many year afterwards.

The more usual toxical effects of excess in tobacco are exemplified in the following typical cases:—

CASE CCLXXXVII.¹—*Smoking*.—Five years ago a young married man of about 32 rushed to me in a great state of alarm, stating that he had suddenly become impotent. This was not strictly true, but still he certainly was less fit for matrimonial privileges than was right in a husband of two years' standing. The next complaint he made was of cardiac palpitation (on examination I found the heart beating unevenly and irregularly), of frequent cold sweats, nervous agitation and causeless fears by night and day too.

I found he had recently returned from sheep-farming in Australia for several years. When there he used to smoke strong shag in a short cutty-pipe all day and almost all night. He had brought his dear though dirty companion with him to London, and continued the habit with a certain amount of modification. In the fresh air of the wild downs he had never suffered the slightest illness, but no sooner had he been in London a few weeks than the symptoms detailed had come upon him, and had gradually increased.

He could not at first understand why I should attribute them to the tobacco, why it should be so bad for him in England, when abroad it seemed to preserve his health. But at last becoming convinced of the difference between British and Australian air, he drew his little black pet from his pocket and broke it in my fire-place. He would never smoke again, rather than risk depriving his wife of her just claims on his attention.

I took the tide at the turn and clenched the promise, which was certainly kept long enough for the palpitations, nervous fears, &c., to be cured without physic.

CASE CCLXXXVIII.—*Smoking*.—Robert B—, aged 25, married, poet and magazine writer, composes a good deal at night, and declares his lines won't rhyme, or his ideas form themselves into words, without he has a pipe in his mouth. The consequence was his being driven to consult me November 30th, 1866. He complained that

¹ Case XCII. in 2d edition.

every ten days or so there would come on at night queer feelings in the left side of his head and a numbness of the nose, accompanied by a sense of dread. At times the feelings come in the left leg, but never at the same time as in the head. A good sweating walk or a run on foot with the hounds cures these symptoms best, he said. His digestion is irreproachable, all excretions and secretions quite normal.

R. B. has cured himself by giving up smoking, but that has been hard work, and I had reason to see him several times during the winter and spring; and on these occasions I made out distinctly that, seriously as his nervous system was compromised, his digestion had not failed.

CASE CCLXXXIX.—*Smoking*.—Robert F— was educated as a medical man, and went to Australia in that capacity, but preferred sheep-farming and money-making. Returning home with a competence at 27, he found himself unable to enjoy himself from nervousness and depression of spirits—"hypochondriasis," as he called it, and justified the name by saying he had a pain in the right hypochondrium. I thought at first this was an indigestion, but could not call it so, as the functions of stomach and bowels were perfect. He had never exceeded in alcohol, but had smoked "nigger-head" in a short pipe all day and night almost. His digestion had always been good.

CASE CCXC.¹—*Snuffing*.—October 22d, 1866. Rev. C. W—, a country clergyman of literary and sedentary habits, has usually enjoyed good health, and in spite of a fondness for his study and dislike of parochial work, visits in his district, and has regularly done two full services every Sunday. It is a difficulty in properly performing the last-named duty which brings him to me. For several months he has noticed that his manner in the pulpit has been getting awkward, and he feels hurried, and has an unreasonable desire to get to the end of what he is about. He sometimes cannot help skipping over the latter half of a sentence so as to go on with the next. For some weeks this hurry of manner has been extending itself to his social and professional intercourse on week-days, and to-day in speaking to me he is excessively precipitate and nervous. He can scarce keep his hands still, and clutches at and handles all the little things around him in my study, though evidently ashamed of his solecism in demeanor.

His appetite is good, he has no flatulence, he can eat anything he likes and drink a bottle of port without feeling any inconvenience, in short he is evidently unaware of having digestive organs. The actions of the bowels and kidney are quite healthy, but he evacuates the bladder more frequently than is needful.

On inquiry I find he is a devoted snuffer, having his pocket-box filled up every day, and keeping a second relay on his table as well.

I said at once I would not prescribe for him unless he would make at once at least a step towards giving up this habit. He readily consented to keep a box only on his table, and to have it filled only twice a week. To supply temporarily its place, I allowed him two teaspoonfuls of tincture of valerian twice a day.

¹ Case XCIII. in 2d edition.

I saw him again in a week much improved, and in a fortnight after that he seemed quite to have regained his natural dignified manner, and to be reconciled to abandon his snuff-taking.

These histories give a pretty full detail of all the important phenomena usually produced by excess of tobacco, according to my experience. Others are merely a repetition of these, in which it may be observed that the digestive organs seem remarkably free from injury. In fact the only two cases I can find in my notebooks where the alimentary viscera have suffered are the following.

CASE CCXCI.¹—Mr. William T—, aged apparently about 50, came to me in March, 1856, complaining of costiveness, pain in epigastrium about three hours after food, flatulence, and dryness of mouth. I could not find any deviation from wholesome habits of life except that he smoked a great deal of strong tobacco. And the event proved that to be the source of his dyspepsia, for by restricting himself to one cigar after breakfast, and taking some charcoal and soda, he came to me towards the end of the month much better.

CASE CCXCII.²—H. C—, a country surgeon, aged 45, complained last year to me that he was becoming unable to follow his profession from excessive flatulence in the ilia. When he was talking to a patient the bowels would begin rumbling and rolling so that he felt ashamed to stay in the room. He was obliged several times a day to unbutton and lie with his abdomen up in the air. At night sleep was broken, and sometimes rendered impossible by the same nuisance. Curiously enough, when he sat up all night, say with a troublesome midwifery patient, he was not half so bad. While talking to me, I observed he took snuff several times, and on inquiry found he consumed nearly an ounce daily. He, of course, could not be unaware of the cause of his disease, but absolutely refused to give it up. He said life would not be worth having without it.

In all other instances which I have taken notes of, drinking was joined with smoking or snuff-taking as the decided efficient cause of indigestion, so that the cases prove nothing for scientific purposes; or else (as in Case CCXCVI., for example) the accusation against tobacco was shown to be a libel by the symptoms not ceasing when the alleged cause had been long removed.

I am surprised at this, for several medical writers seem to consider it a matter of course that the pleasures of the pipe should have a special deleterious effect on the salivary glands and stomach.

Dr. Prout says: "The severe and peculiarly dyspeptic symptoms sometimes produced by inveterate snuff-taking are well known"—

¹ Case XCIV. in 2d edition.

² Case XCV. in 2d edition.

so well apparently, that he does not enumerate them, so that perhaps he may mean the nervous weakness described above—but then he goes on to remark, “I have more than once seen such cases terminate fatally with malignant disease of the stomach and liver.”¹ The insinuation is that tobacco causes malignant disease; which is proved false by the fact of cancer of all the organs being more common among women than among men; and among men being quite as common among those who do not smoke as among those who do. It is very clear that Dr. Prout has misapprehended the pains of incipient cancer, and ascribed them to the tobacco which was taken to solace them.

I must allow that I myself took such ideas as Dr. Prout's for granted, and supposed that of course the salivary and gastric secretions must be the chief sufferers from tobacco, till I came to review my experience and drew out these two solitary specimens of their being possibly affected by it. They, therefore, must not be considered as the type of a class.

The poison of tobacco smoke seems to attack more particularly the nervous system. Intermittent pulse, palpitation of the heart, shaky hands, nervousness, imaginary impotence, and the like, are produced by it, but not primary affections of the digestive organs, as a rule. And in snuffing, the large quantity of the drug which goes down the œsophagus seems to pass the mucous membrane with little injury, and to affect the system only by the absorption of its alkaloids soluble in the blood.

This last sentence may afford a hint as to the method of treating our patients. It is avowedly, almost proverbially, difficult to get them to resign the soothing herb. Few of them take such a wholesome alarm as Case CCLXXXVII., or, if they did, would not act upon it. They say the sudden deprivation is too much for their strength of mind. Now if a tobacco is prepared by abstracting the main deleterious agent, nicotina, a step is set by which the patient may be let down easy, and not run the risk of an abrupt change. For smokers a convenience of this sort is afforded by the Vevay or other Swiss cigars, which are the common leaf fitted for use in cigars by soaking in water till one-third of its substance is abstracted.

I do not know of any kind of snuff manufactured on a similar

¹ “Stomach and Urinary Diseases,” page 25.

plan, and consequently there is not the same aid to persuading a victim to surrender the indulgence; but one old snuffer told me he had broken himself of it by the aid of kitchen salt finely pounded, of which he mixed more and more daily with the contents of his box, till it was nearly all salt. Then he took plain salt, and soon gave that up. I have heard also of ginger being employed in the same manner. Another, who had acquired the habit at Cambridge many years ago, and did not like the look of it on leaving the University, used to carry for some time a vinaigrette of aromatic vinegar for the same purpose.

The remarkable experiments of Böcker, which I introduced to British notice some years ago, tend to associate *tea* with alcohol and opium, as a restrainer of vital actions.

The following case, illustrative of the pernicious consequences of excessive tea-drinking, is extracted from my Clinical Lectures at St. Mary's Hospital.

CASE CCXCIII.¹—Maria D—, a spinster of thirty-two by her own confession, but probably older, has been a general servant in a light place for seven years. She has been happy, and has enjoyed pretty good health, interrupted only by occasional headaches; but for some time lately things have seemed to annoy her more than they ought to do. Three months ago she had a bad “bilious” headache, which was followed by some paroxysms of laughing and crying. Five weeks back she had an attack of diarrhœa, from which she got better, and went to work again in spite of weakness, for she was loth to let her mistress want her. But exertion was in vain, for she no sooner tried to clean a grate than she fell down speechless, and had a succession of hysterical fits, losing her senses, but not biting her tongue. Then she began vomiting everything she took, and this had been going on for three weeks, and seemed to amount to a complete rejection of all her food immediately it was swallowed. When you saw her, there was excessive flatulence, the air bursting up from the stomach in roaring eructations while one was talking to her.

In this woman the effect of the wide pupil and sympathetic hemip-tosis is not hidden even by the disfigurement of bleak edges to the cyclids; and it quite accords with the droll earnestness of her manner, which increases gradually as you let her go on talking about herself, leaving no doubt of her strong hysterical diathesis.

As to cause, that is still more directly traceable to the stomach than even in the last case. It would seem that for some years she has been becoming more and more addicted to tea-drinking. She confesses to caring for little else, so long as she could get her favorite food or physic—or poison—I do not know exactly how to call it.

¹ Case XCVI. in 2d edition.

Her mistress was quite angry with her for eating so little meat ; and with a far-sighted economy not common in her class of life, took much trouble to keep up the health of a faithful servant. But the weakened stomach refused meat, and she was literally starving in the midst of abundance. (Nov. 1, 1861.)

Much ill-health arises among women of the lower orders in this country from the custom of sluicing themselves with tea. (I am not aware if similar results follow in Holland and Portugal, the only other tea-drinking populations in Europe). Want of appetite for the quantity of coarse albuminous food necessary to working people is induced. In the upper ranks not so much harm is done by the five o'clock kettle-drums and similar sloppy proceedings now so common, because their bill of fare is more attractive to the palate, and they usually get as much flesh food as is good for them in spite of it. Besides which, educated persons have usually the instinct to stop in time a custom which really depends on a mere whim. Still it cannot under any circumstances be a wholesome habit.

Tea seems equally injurious to the stomach when inhaled as in the usual form of infusion. I remember some years ago being puzzled in viewing lives for insurance by some singularly colored tongues. On inquiry, I found their occupation was "tea-tasting" for the greater part of the day. Now, tasting tea is performed partly by sipping some of the infusion, but principally by sniffing up the aroma into the nostrils and chewing a few leaves in the mouth. I was given to understand that they often found themselves nervous after a day's work, that the hand would shake, and that the tongue acquired the smooth orange coating which I saw before me.

SECTION III.

Inaction of Body.

Among the originators of dyspepsia we commonly find included in books sedentary habits. But when I come to look over my notes, I cannot extract any cases which would exhibit this fact. experience does not tell me that a sedentary life, such as that of a clerk or bookkeeper, for example, would induce the defect unless it were joined to some other cause. Alone, with a properly regulated diet, it seems consistent with quite healthy digestive powers. We find it so in the bedridden under our care, whose life may be

viewed as the complete type of a sedentary one, yet they do not suffer except from some more than ordinary folly in diet, or from the misuse of some drug.

When, therefore, those who come before us for indigestion attribute their state to want of exercise, we must not stop there, but search further for other and more certain causes. For example :

CASE CCXCIV.¹—M. S.—, editor of a weekly newspaper, aged about forty, laid on the many hours he spent in the office-chair the blame of enteric dyspepsia, which spoilt his night's rest by waking him in the early morning with flatulence. Charcoal gave him only temporary relief, but dividing his meals more, taking a good luncheon and a light dinner, seems to have set him up completely. This was in 1856, and now he seems quite equal to his official duties, and looks as robust as any leuco-phlegmatic men ever do.

Let it not be supposed that I underrate the value to health of relaxation in the open air. The fresh oxygen, the cheerful occupation, the distraction of the mind from injurious tension, must, however, be taken into account by the physiologist, and not all the benefit set down to muscular motion, which latter element is but a small part of what ought to be included under the recommendation of "exercise" by a rational physician. I have come across more brain-laborers whose digestion has been injured by injudicious excess in muscular exertion than by the reverse. Let not those whose avocations are necessarily sedentary, despair of finding by judicious experiment a mode of passing their lives in fair, if not in blooming, health.

The division and arrangement of the meals according to the mode of life is a very important part of the science of digesting them. Much must be left to individual experience, but sedentary men of letters, and others who do much work at the desk, I generally find are better for taking a good meat luncheon and tea or only a light dinner after the day's labor. And if they take a glass of grog, it should be at bed-time. Great late meals washed down with a quantity of alcohol do not suit them.

On the other hand, those who pass a muscular life often suffer from eating in the middle of the day. For instance, I recommended the following to dine late, and to take at most a glass of wine and a biscuit in the middle of the day.

¹ Case LXVI. in 2d edition.

CASE CCXCV.¹—A. W—, a schoolmaster, always dined with his boys at one o'clock, and tried to work off his dinner by playing at cricket with them in the afternoon. But the more he played at cricket the more he suffered from discomfort at the epigastrium followed by intense headache.

CASE CCXCVI.²—A Welsh country gentleman, aged 57, was under my care in 1862 for weight at the epigastrium, acid cructations, head-ache, and sleeplessness. He said the beginning of it was over-smoking at Cambridge; but since then he had been to a number of physicians, and taken a great deal of medicine, homœopathic and allopathic. He had been in the habit of much exercise, and always dined at two o'clock. Dining late relieved his symptoms, but he did not seem satisfied without medicine.

Laborers, sportsmen, pedestrians, postmen, are all instances of ready access, from whom it is easy to learn that habitually to eat heavily during the hours of bodily toil produces sooner or later indigestion, and that health and comfort are secured by making supper the principal meal.

But there is one form of physical inaction which seems especially deleterious to the digestive organs, namely, coddling, or the not allowing the skin and circulation to be excited to normal action by changes of temperature. This is a cowardice which is always punished in this life, not only by the loss of much pleasure, but by the falling into much pain.

CASE CCXCVII.—Miss M—, aged 32, was placed under my care October 24th, 1867, by Dr. Dunlop Anderson, of Glasgow, from whom I learnt the following history of the case. She had been ill since January with cardialgia and vomiting, occurring almost immediately after swallowing any kind of food. This was followed by obstinate costiveness and constipation, by great depression of spirits, and by gradual cessation of the catamenia. She was excessively sensitive to cold, constantly shivering, even when cowering over the fire, and wearing, even in warm weather, flannel all over the body and great quantities of over clothing. This continued all the summer. In the autumn she went to Malvern, and was benefited by the change; for the vomiting ceased. It was, however, replaced by an increase of the cardialgia in respect of time; it lasted longer, not being relieved, as before, by vomiting. After being in Worcestershire a few weeks, somewhat improving from the change of air and scene, she was persuaded by a boarding house acquaintance to consult an empiric, who gave her such a terrible account of a supposed "disease in her spinal marrow," and threatened her so solemnly with immediate "decrepitude," if she did not adopt his panacea, that she was much alarmed, and came off straight for London advice at the date mentioned.

¹ Case LXVII. in 2d edition.

² Case LXVIII. in 2d edition.

On examination in bed I found her very thin. There was great pain complained of on pressure all over the abdomen. It was, however, most at the epigastrium; and at this point she said it was brought on by swallowing food, especially solid meat. It was so marked at the centre of the epigastrium that I felt strongly tempted to refer it to ulceration of the mucous membrane of the stomach; and indeed I found that this diagnosis had once been made, and the insertion of an issue in the skin at that point proposed.

The tongue was very clean, but it was pale, and at the edges somewhat took the marks of the teeth. The urine was natural. The bowels continued obstinately costive, and she had hitherto forced them open daily with purgative drugs of increasing strength.

I could detect no sign of organic lesion in heart, lungs, or digestive organs.

With some trouble I elicited the fact that the sensitiveness to cold, above mentioned in the history, had preceded the other symptoms, and indeed that extreme measures to obviate it had been adopted, such as for instance wearing on the lower part of the body flannel drawers, two flannel petticoats, and a quilted silk petticoat at all times and weathers.

I gave her valerian for a week. No results. I then insisted on stripping off her drawers, and all the extra clothing and making her dress rather lightly than otherwise. I made her take a shower-bath daily, at first tepid, then cold, and had her taken out for a walk every forenoon in all weathers. At the same time I allowed her to get as warm by the fire as ever she chose, so that she did not cower and mope over it. I gave her also two grains of quinine with $\frac{1}{20}$ th of a grain of strychnine twice a day, and another $\frac{1}{20}$ th of a grain of strychnine with two or three grains of aloës and myrrh pill nightly. She had also an opium plaster applied on the abdomen to be renewed every four days.

It was hard work to get this treatment carried out; the cold was shuddered at, and the habitual purgatives begged for. But it was carried out, in spite of frost and snow. And with the hoped for results, for she gradually lost her pain and her disgust for food, gained flesh, and was able to do with only the small purgative pill I mentioned.

I lost sight of her in the middle of December, when she was summoned home by the death of a relative. She promised, however, to continue the treatment, of the value of which she was convinced. In February, 1868, I heard from Dr. Anderson reporting that she had lost her pain in the abdomen, and had almost entirely recovered her health and spirits, but still continued the shower-bath.

CASE CCXCVIII.—“Nervous vomiting” was the diagnosis Dr. H— made of his own ailment when he came to me February 6th, 1868. His aspect was that of a robust muscular man, but he said he was fit for no bodily exertion, so much it tired him. I could detect no textural lesion beyond a softness and tumidity of the gums, nor any derangement of the excretions, beyond a tendency to make watery urine and to pass a pultaceous motion on rising in the morning. What he complained of especially was that he often retched during dressing, and

that on sitting down to breakfast the attempt to eat anything produced actual vomiting. He was obliged to go without food till eleven o'clock, when he swallowed a glass of porter. Between one and two he could generally manage a pretty good luncheon, and did his duty also at dinner. At any meal, however, if there happened to be any impediment to the usual working of the jaws and gullet, such as a fragment of string in the soup, an unexpected bit of gristle in the meat, a core in the potato, vomiting would be instantly produced.

I found he was extremely sensitive to cold. He wore double flannel, made expressly for his private use (he lived in the West), all over the body, had a fire in his sleeping room, heaps of bed-clothes, and an affectionate wife, but all to no purpose; he could not get warm. He was so miserable from want of his breakfast and constant chilliness that he was becoming exceedingly irritable to both his patients and his family.

I advised him to leave off his extra clothing, and to take a cold shower-bath daily, at first in the middle of the day, and as soon as he grew accustomed to it, before breakfast.

CASE CCXCIX.—I think the most disagreeable visits I was ever called upon to pay, were to a lady separated from her husband, who lived in two rooms kept at an even high temperature, night and day, winter and summer. She was fond of having doctors in attendance, but probably took very little active drugs, as neither I nor anybody else could find a druggable point of attack. She became excessively pale, thin, and flabby, suffered from flatulency, and passed stools of undigested food. I was applied to by a rising young officer where her husband proposed to insure her life, and I advised them not to take her. But they did, without even her being seen by their medical man, and a few weeks afterwards she died. There was suspicion of poison, but the unnatural half-life she had lived so long was really enough to account for the final catastrophe.

SECTION IV.

Inaction of Mind.

The duties of the human mind lie with the world without, and I call it "inaction" when this relation with material objects is suspended. We are assured by psychologists that the mind deprived of external employment, like Hudibras' dagger—

"Eat into itself for lack
Of somebody to hew and hack—"

that concentrated upon itself it will develop mental disease. I confess myself to having some doubts whether we ought not rather to say that it makes evident and brings into prominence previously existing disease. Because the same class of observers generally also go on to say that the fixing of the mind on any portion of the body will

cause morbid phenomena to be therein developed. Now this is an experiment I have often amused myself by trying in a leisure hour; I have looked at, thought about, argued about, and in imagination dissected, my finger tips, nose, toes, epigastrium, knees, &c., till the power of attention was wearied out; but no pain, or redness, or throbbing, or swelling, no stiffness, or coldness, or anæsthesia has followed. What really happens however in consequence of a concentration of the mind upon the body is this—should there be already existing any slight morbid condition capable of declaring itself to the nervous system, but not in such a way as to draw off from other objects the engaged mind; then, should the attention be unfortunately attracted to this part, the pain is noticed, is in idea multiplied. Anxiety and distress follow attention, and then at last the bodily functions are interfered with, the saliva and gastric juice fail, and the digestion suffers. From thence, perhaps, as a tertiary effect, may ensue deteriorated nutrition of the local injury.

CASE CCC.¹—An old blind soldier, who lived near the Chelsea Dispensary when I was a physician there, used constantly for several years to come to me from time to time complaining of excruciating pain in the abdomen. He had his pension, and was comfortably off in circumstances. No one on looking at him could doubt the reality of his feelings; yet there was never anything in his state of health apparent to account for them. The only cause I could trace them to was his being occasionally left alone by his wife and family; and then his blindness prevented his mind being drawn off to surrounding objects, and he would sit still, allowing any little abdominal discomfort to be depicted in exaggerated colors on his vacant fancy. He had in truth always a little flatulence, but never the “excruciating pains” except on these occasions.

I have not seen much of blind people, but such as come under my notice are always disposed to exaggerate in this way any slight bodily discomforts into real tortures. From want of mental distraction, their internal sensations occupy too prominent a place in their psychical life.

Poor blind persons cannot help themselves, but just in the same way people who voluntarily deprive their minds of occupation, find out the existence of innumerable pains in various parts of their bodies; the anxiety and worry thus occasioned really do deprive them of sleep, injures their digestion, and by the time they are driven to the doctor makes them materially as well as ideally ill.

¹ Case LXXX. in 2d edition.

Sometimes these pains arise from organic change which had existed for many years unnoticed, and therefore without effect on the general health, and unaffected by it. But when once it is thought about so as to create anxiety from the innutrition hence arising, it grows rapidly worse.

CASE CCCI.¹—A paper-maker, utterly uneducated, though very wealthy, aged 70, was brought to me by his wife and doctor in March, 1861. He had had a slight catarrh of the bladder, following an old stricture, many years; but as long as he was in business he never suffered materially from it. Having made more money than he could possibly want, he thought he would retire and “enjoy himself.” But alas, he had nothing to enjoy himself *with*—except indeed his money, which is not of much use without tastes to spend it upon. So he took to thinking about his health, considered what was wholesome and what was not, what to eat, drink, and avoid, for the sake of his defective urinary organs. The consequence was that his digestion failed, he complained of weight after food, vertigo, flatulence, and “intolerable” pain in the epigastrium. His aspect, as he sat rubbing the pit of his stomach when introduced to me, was one of abject misery. The urine contained a little pus, but he made no complaint about his bladder. He had the white tongue of a nervous man, and his bowels were costive. My next report of him is dated August, 1862, when I saw him in much the same unhappy state of feeling. But the bladder had got a good deal worse; there was more pus and albumen in the urine, and the specific gravity was only 1.015. I do not detail the treatment, for it was various and useless; and a few weeks after his last visit I received a card from the family announcing his funeral.

As a more cheering illustration *per contra*, I will choose an instance of the same anatomical condition as the last, in order to show that urinary disease is not necessarily depressing to the mind.

CASE CCCII.¹—J. B.—, a confidential clerk at the India House, getting on for 60 years of age, was sent to me by Mr. Coulson in June, 1856. He had enlarged prostate and vesical catarrh, but managed to avoid all serious inconvenience in that quarter by using a catheter. Now and then his stomach got out of order, but he could generally trace that to a good dinner or some such social imprudence; and then his bladder discharged more pus. So he went on some years, till I began to observe he was coming to me rather more frequently, and that he had a care-cumbered face, leading me to ask him what he had been doing lately. “Doing? Nothing. I am a gentleman at large now—pensioned off.” Poor Charles Lamb! also an India house clerk; I thought of him and his humorous pathos on being pensioned off, and said immediately that it would never answer, it was poison to mind and body. “Ah, there’s a good deal in what you say: as the spring comes on I and Mrs. B— will take to garden-

¹ Case LXXXI. in 2d edition.

² Case LXXXII. in 2d edition.

ing: she has a family taste that way." And to gardening they took, and I saw him much seldomer, and heard no complaints of his vesical troubles; though he dropped in at the end of 1864 to introduce a patient to me, and see how I was. He is still alive and well.

Those in whom tastes have been implanted for simple amusements cannot be too grateful for them. And I hold it one of the wisest things we can do in busy middle age to keep up or acquire such tastes. When once the inevitable pensioning off comes, it is usually too late to go through the necessary education. I have indeed seen a diplomatist, who had held in his grasp the destiny of nations, commencing at sixty-five the study of Italian, for the sake of reading Dante; and I thought at the time it showed more courage even than his old trade of bullying into reason the masters of armies. Such courage is rare, and more generally the mind's mirror gets dimmer and dimmer, till there arrives with premature haste the state of things so graphically painted in the last chapter of Ecclesiastes. I am sorry to say the stock example of this is a member of our own profession, who, when in retirement, satiated with wealth and honors, is described as looking over the trees of his park with a conviction that some day he should hang himself from one of them. He had wasted his life in routine work, and it was too late to educate the mind to anything else.

The class of patients instanced in the last two cases are such as have some structural disease, of which I have described the aggravation by idleness acting through the digestive organs. More common still are those who have no existing organic change in any part of the body; and in these the digestive organs act upon themselves only, and produce distress and functional derangement. A state of things arises pithily sketched by Dr. Markham in a letter introducing a patient to me—"he formerly was poor, worked hard, had plenty of appetite, little dinner, and little time to eat it; now he is rich, with lots of time and dinner, but no stomach."

Sometimes the vacancy of mind left by the surrender of involuntary occupation is such that absolute mental aberration is the result. There are active delusions about facts, persuasions that they have happened when in reality they have not. Under those circumstances diagnosis is much impeded by the difficulty of knowing what is true and what is false of the various symptoms related to you, if they are not in themselves devoid of internal probability.

In these cases I have been much assisted by the observation of a peculiarity in the mental state of the half-insane, which was displayed in the following:—

CASE CCCIII.¹—Mr. G—, aged 53, was, till the early part of 1866, actively engaged in trade. He then gave up his occupation, and supposed he had sufficient mental resources to pass life agreeably. So he settled at a fashionable watering-place, and took to desultory art and literature. But the elegancies of life sit oddly upon him, for he is a grim-featured, harsh-mannered man, unlikely to find much favor in that society whose business is amusement.

He had, when he came to me in the spring of 1867, the aspect of strength and health, but complained that he had been for several weeks a dreadful sufferer from excruciating pains in the abdomen, coming on at night and entirely preventing rest. I had no reason for doubts until I observed a painful anxiety, which increased as he talked, that I should believe him, joined to an evident suspicion that I did not do so. I however prescribed him some valerian at night.

When I saw him again in a week the valerian had evidently made him feverish, and he said the nocturnal pains were worse than ever. I then elicited that last autumn, in fact after he had been trying idleness for some months only, he had been exceedingly low-spirited, and that he used to get nervous and fidgety at night and have paroxysms of causeless terror.

I have since seen reason to conclude that the pains by night and the wakefulness were pure delusions.

I have always in my lectures on the practice of medicine insisted much on the aid to the diagnosis of mental disease afforded by the peculiar suspiciousness of itself which the mind exhibits. I remember a lady coming into my study saying, “I am *not* one of your nervous patients”—the exordium afforded me immediate evidence that she was so, as the result proved. All lunatics, even in their wildest mood, seem to me to recognize a difference between their delusions and facts, and this makes them often so furiously to insist upon them. Loud talk and shallow faith always run together. This is still more remarkable in the half-insane at an earlier stage of insanity. Later on, namely, in the half-insane stage of recovery, the peculiar suspiciousness is much less marked; indeed an amiable trustfulness often takes its place. With the earlier stages we non-specialists are most concerned, and I am sure what I have named is a valuable aid to diagnosis.

The peculiarity is rarely, or only cursorily, alluded to in monographs on insanity, for the simple reason that specialists do not

¹ Case LXXXIII. in 2d edition.

experience the difficulty, and therefore do not value any means of overcoming it. Nobody is brought to an asylum without there being abundant evidence of mental aberration, and the slighter indications therefore are of no practical moment. Our patients are probably never in a state to render restraint legal, or desirable on any account; remain useful and unnoticed members of society all their lives, and perhaps only manifest a delusion in intercourse with their physician. We hail, therefore, with gratitude any thread to guide us out of the dilemma between a fact and a fancy.

Eating in a dull, heavy kind of way without enjoying it often produces dyspepsia in a moderate form.

CASE CCCIV.¹—Rev. N. R—, a bachelor of middle age, was my patient in the autumn of 1864, for flatulence of bowels accompanied by confusion of intellect during the second stage of digestion and sleeplessness. By regulation of the diet, and quinine with strychnine, he got well at that time. In November, 1865, he came to me again, saying that when he dined in company he could digest anything, and never suffered, however rash he had been at table. But when he took his meals alone for several days together, his old symptoms of the previous year returned, and no carefulness or abstemiousness prevented them.

I should conjecture the pathological condition to be a partial paralysis of the solar plexus, from attention being directed to it.

Several commercial and literary men have complained to me of attacks of vomiting (that is, temporary paralysis of the stomach) when they took dinner alone, and so were apt to let the mind stagnate; and they have told me in wonder that they could dine out and eat and drink all sorts of rich things with impunity. They did not seem aware of the preservative value of frivolous conversation.

CASE CCCV.²—A famous scientific man of middle age, deeply occupied with his pursuits, and never in the habit of "wasting his time," as he called it, on amusement of any kind, complained to me that when he dined alone, as he usually did on the plainest food, he invariably vomited afterwards. But that in dining out he never suffered even from nausea. At one time he used to read at meals, but that seemed to make no difference at all.

Which is waste of time, work or play? Truly, sometimes one and sometimes the other, but each out of their due season and

¹ Case LXXVI. in 2d edition.

² Case LXXVII. in 2d edition.

proportion. The epithet "frivolous" (from the same root as "frio" = what may be easily rubbed out and forgotten) is not necessarily depreciatory. Light thoughts, like occupations that are easily rubbed out and leave no care or impression behind them, are good for mind and body and worldly estate.

It is not absolutely necessary to have been a hard worker first for idleness to lead the thoughts inwards to the digestion, and put it out of order. Some who have been lotus-eaters all their lives, still do not get acclimatized.

CASE CCCVI.¹—Miss M. J.—, aged about fifty-five or sixty, had as tough a constitution as most people I know of, but used to consult me about catarrhs or some trifling ailments occasionally. When I was away from England in 1865, she took a whim to go and live at an hydropathic establishment. She was not hydropathized, and it is a pity she was not, for it would perhaps have kept her out of mischief. But she used to listen to the inmates talking about their insides, and having very limited mental though plenty of pecuniary resources, she had nothing else to think of. The consequence was she began to suffer from gastralgia, even after the excellent wholesome diet and fine air she was getting at the place; and when she came to London to consult me on my return, she was seriously out of health, always feeling a weight at the epigastrium after meals, having acid eructations and sometimes vomiting, and the tongue appearing pale and coated. I made her leave the noxious moral atmosphere, and adopt the physically worse alternative of close London lodgings with their well-known greasy cookery. Then she engaged a companion of her own age and position to talk to, and, aided by some quinine and strychnine, soon got well enough to run over for a trip abroad, with a strict caution to keep clear of spas and invalids.

My main object in the treatment is to prevent the sufferers from resorting to drugs, which, in such cases, not only induce their own special morbid conditions, but also confirm those already existing.

SECTION V.

Exhaustion of Body.

CASE CCCVII.—During a game of high jinks in the servants' hall of a country house, Benjamin, the butler, a thin muscular man of 35, was dared to carry the housekeeper, a solid person of nearly eighteen stone weight, round the room. He succeeded, but felt strained and prostrated with the exertion. An hour or so afterwards he became aware of a pain across the front of the belly, and during the night this became very bad, and was accompanied by the rolling and

¹ Case LXXXIV. in 2d edition.

grumbling of wind in the bowels. This pain returned frequently from time to time, sometimes ceasing entirely, but having no regularity of intermittence. As he had been previously quite well he attributed it to his muscular strain, and that opinion was shared by Mr. Bleek, the surgeon who sent him up to me, November 22, 1867, six weeks after the accident.

On examination I found that the spot where the pain was situated was between the navel and the epigastrium, and that it was tender on firm, but not on slight pressure. He stated, however, that when the pain was on, there was tenderness to touch in that locality. Pressure produced a gurgling each time that I exercised it at intervals of several minutes. The bowels were evacuated regularly without artificial aid. The pulse was weak. The tongue was whitish, smooth, and pasty-looking. He had been living lower than usual, to try if food had any influence over the pain (which proved not to be the case), and that perhaps accounts for the condition of the tongue and pulse. The distension of the abdomen, accompanied by a loud rumbling of the intestines, continued to keep him awake at night, but by day it was somewhat less frequent. Bismuth, charcoal, and other medicines which had been administered had proved of temporary avail only.

I advised his wearing an Elstob's belly-belt, to take quinine and strychnine in full doses twice a day, and to live more generously.

A somewhat similar instance is related for another object in a former chapter (Case XXIII.), where the exciting cause of a long-continued indigestion was running and hallooing up Epsom Downs on a Derby day; and, again, Cases XI., XXII., and LXXV. Over-exertion of the voluntary muscles seems to withdraw from the alimentary canal that nervous power which is needful for the performance of its functions, not only temporarily but chronically. Hence loss of appetite and imperfect digestion of the small quantity of food which is taken.

Excessive demands on the secreting glands are precisely equivalent in physiological eyes to excessive muscular efforts. Here is an example of the punishment inflicted for requiring the mammary glands to supply more than could be provided for by the most vigorously vitalized digestion.

CASE CCCVIII.—Emma M—, a married laundress of 27, bore five children, and then thinking she had done enough for society, suckled her infant for two years and four months to prevent a fresh conception. The consequence was that she was obliged to come into St. Mary's Hospital July 22d, 1858. Her mouth was dry, she lost her appetite; she had pain in the pit of the stomach running through to the right scapula and shoulder, and a sensation of sinking; the belly swelled up with wind, which rolled about and sometimes passed off in tasteless eructations, sometimes was reabsorbed; she was consti-

pated sometimes for a week together; her motions were black, some times lumpy, sometimes loose.

Of course the catamenia flowed not at all, the patient became prematurely sallow, exhibited a fine specimen of venous murmur in the neck, and had palpitations of the heart. But these blood symptoms were secondary to those referred to the abdominal organs.

She had at first aloetic purgative pills and "nervines," such as assafoetida, valerian, and galbanum. But they did not seem to agree, the pains were just as bad, and she slept not so well. Then she was ordered chloride of iron and quassia, and on August 7th a "general improvement" is recorded in the clerk's book, and no further observations are preserved.

There needs but little to be said about these cases, so obvious is it that the chief remedy must be rest.

Sexual excess is said by French writers to produce indigestions. My own experience certainly does not confirm this statement. The digestion of prostitutes (whose trade may be considered an excess) has always seemed to me exceptionally vigorous. Their health is less injured by riotous living and spirit-drinking than that of other people who equally indulge. I speak of the class who are patients at the Lock Hospital, and who, being of the poorer sort, have a good deal of healthy exercise in the open air. Even in men indigestion does not appear to be made worse by indulgences of such an extremely exaggerated character as the following:—

CASE CCCIX.—Mr. S—, an active young man of business, has consulted me several times about a weakness of digestion which follows any extraordinary anxiety, and which especially prevents his digesting the alcoholic liquids needful to a diligent brain-worker. In the spring of 1869 he had a very thick crop of pityriasis versicolor on the thighs and trunk; and the eruption was very irritating on the skin of the penis and scrotum. The consequence was he had abnormally frequent erections and lustful desires. This at last amounted to quite satyriasis, when he tried by fornication to relieve his appetite. Almost immediately after connection he was as bad as ever, and full emissions followed a dozen acts quickly succeeding one another. Baths of hyposulphite of soda easily removed the pityriasis, but the more distressing evil remained unalleviated. In September he was quite worn to a skeleton. But his digestion, though still weak, and easily injured by slight causes, was not made any worse than usual by the monstrous sexual exhaustion. Indeed the order of causation seemed to him to lie quite in the opposite direction; for if he took fermented or spirituous liquors so as to produce acidity of stomach, he suffered the next night from seminal emissions.

Masturbation also has been named by M. Chomel in his volume on "*Les Dyspepsies*," as a cause of indigestions. My experience

does not enable me to agree in this either, though I cannot deny the possibility of it. Still, I believe that more searching inquiry into those cases where the two morbid phenomena are associated together, will often enable us to discover a different sequence, and to call the quasi-voluntary act of lust an effect of feelings perverted by disease. A perfectly healthy lad never invents this for himself; and if he has taken it up from imitation, curiosity, or the suggestions of infamous pornographic literature, disgust and boyish honor soon break him of it. Where it is continued there is almost always some mental or bodily disease requiring medical care. As for example:—

CASE CCCX.¹—Augustus T—, aged 24, came to me in October, 1863, saying that for some years till lately he had been in the habit of solitary lust, and that he was suffering from excessive flatulence, and from pain produced at the epigastrium by any quantity of food sufficient to nourish the body. He had broken himself of the habit, but was dreadfully distressed in mind at the degradation of ever having indulged in it, and attributed to it the low state of bodily health he endured. But I found on inquiry that from childhood he had been a greedy boy, morose and weakly, that he had suffered from worms; and that his education was neglected on account of his health, long before the nasty practice he told me of had been adopted.

On the other hand, I can remember at least two patients where the obscenity had been learnt by imitation and practised as often on the average as twice daily for a succession of years without the alimentary canal suffering at all, whatever other functions may have failed.

SECTION VI.

Exhaustion of Mind.

In the last section the failure of the appetite was pointed at as a most important stage of vitality degenerating under the influence of unusual physical exhaustion. It is still more important when the strain is mental; and for this reason, that we have not then in general any other previous distinctly marked feature. Loss of appetite is familiarly known as a *consequence*, but it is also a *cause* of bad health. And the mode in which it affects the health seems to be by diminishing the supply of albuminoid food, and so indirectly the quantity of gastric juice and of red-blood disks, and so we have anæmia and indigestion as a part of it.

¹ Case LXXV. in 2d edition.

CASE CCCXI.¹—In November, 1861, I admitted to St. Mary's a pleasing, well-grown girl of twenty, named Margaret C—. She was extremely pale, and so weak that she could hardly raise herself in bed; yet no organic disease or pathological state of any of the solid parts of the body could be discovered to account for her condition. She attributed her illness to the close smell of a workshop in which she had been employed, which spoiled her appetite, making her at first crave for unwholesome things, and reject what was set before her, afterwards destroying the desire for victuals altogether. She observed it did not seem to make the other apprentices ill, who were not so squeamish. Perhaps the accident of her having been more tenderly nurtured, and so more sensitive than her companions—perhaps the responsibility of being placed over them as forewoman—contributed to this result. The end was, that the loss of appetite induced anæmia, swelled ankles, amenorrhœa, and a certain amount of hysteria. Then, though removed from the original cause of the disease, she took a disgust to all articles of food, complained that vegetables especially produced flatulence, and had to come into the hospital, she was so weakened. When put upon the diet of milk and liquor calais every two hours, with a pint of beef-tea in divided doses daily, she digested it without inconvenience, but at first without relish. After two days she was able to take an egg, and after twelve days of gradual additions of this sort she arrived at the full allowance of "ordinary diet"—mutton, porter, beef-tea, and milk. She lost her flatulence, and soon picked up her good looks.

For medicine she had iron three times a day, and pills of aloës and myrrh, at first every night, afterwards not so often; and in a short time was able to eat even a hospital potato without pain.

The internal train of events was probably somewhat on this wise. In the first place, the nausea which sensitive persons feel when food is placed before them with nasty surroundings prevented its being taken with appetite. Then the mental exertion involved in an untoward responsibility thrown on a conscientious girl would lessen the life of the involuntary muscles which carry along the mass of food through the alimentary canal. We doctors know well how heavy our food lies in our stomach if called to a serious case just after a hearty meal; how long it is in leaving it, and how enervated the parietal muscles feel.

By this process the vitality of the epithelium is diminished, and the mucous membranes become coated with a thick layer of stringy slime. Thus the endosmosis of alimentary matter into the blood is impeded, and the patient pines in the midst of plenty.

The most important items in the cure were the rest and the ladder of graduated diet (see page 101), up which our patient was led to renewed life.

¹ Case IV. in 2d edition.

CASE CCCXII.—George C—, aged 39, has worked himself up from the condition of a laboring man to that of a considerable barge owner and contractor, so that he has thrown on his mind a continually increasing amount of responsibility for which by education it is hardly fitted. He is a strictly temperate person, from choice not principle, and often for weeks together does not touch alcoholic liquors. He has been twice married, and always moderate in sexual intercourse. In 1865 he had an acute attack of illness which his doctor called “bilious fever,” and has since then never been quite the man he was before. He feels timid and shaky during the day, and at night gets so blown up with wind that he can hardly lie in bed. This is worse and almost unbearable whenever he is harassed by business more than ordinary. These symptoms have increased during the last year, and are accompanied latterly by palpitation of the heart.

He used some years ago to consume habitually a good deal of various purgatives, but for a long time has not knowingly taken any efficient medicine, though he suspects real doses of strychnine have been administered under the guise of homœopathic globules. Beneficial effects, at all events, resulted.

I prescribed (January 14th, 1868) one-twentieth of a grain of strychnine and two grains of quinine twice a day.

In three weeks he got well enough to leave off medicine.

In May he had some boils about which he came to me. He reported the digestion as much improved.

I saw him last in July, but have heard several times since from his friends of a continuance of health.

Strychnine is peculiarly well suited to cases of “brain-fag.”

I do not believe it is the quantity, so much as the quality of intellectual occupation which does harm. Composition, the creation of thoughts, even the putting of old thoughts into new forms, is not, in my experience, injurious. Where it is enjoyed, I believe it a peculiarly healthy occupation. It is the dreary routine work, *invito genio* and against time, which knocks up a man’s stomach.

CASE CCCXIII.—Rev. G. B—, aged 50, after being invalided home from India, got well enough to take the post of secretary to a society. But the brain-fag consequent upon that, without any other change of his habits, brought on nocturnal flatulence, nightmare and seminal emissions. And during the day his spirits were so depressed that existence was a burden. This was in November, 1862, and a month afterwards he came to report that assistance in his work had been granted him, and that he was quite set to rights, except a little weight at the epigastrium.

¹ Case LXXVIII. in 2d edition.

In fact it is worry rather than work which exhausts the mind. Such is the moral we draw from taking the prosperous barrister, physician, novelist, whose minds are occupied every waking moment by their brimming list of briefs, patients, or plots, and comparing them with the laggards in life whose tales are writ in water, such as Case XIX., Case XXXI., Case XXIV., Case XXV., Case XXVI., Case XXIX., Case LXVIII., Case LXXVIII., Case LXXXIII., Case LXXXV., Case LXXXVI., Case CXXXII., Case CXXXIII., &c. &c.

SECTION VII.

Eating too little.

There are so many people who cannot get enough to eat of any sort, so many who cannot get what they like to eat, and so many who are prevented by others' or by their own whims from eating enough of what is before them, that errors of deficiency are much more common than errors of excess.

Examples in abundance have already been given, especially from among the hospital patients. But it may likely enough appear to the reader that the cause is there complicated by the coexistence of those which have made the subjects of previous sections of this chapter—sorrow, anxiety, tippling, over-work, and the like. These sufferers are also exposed to cold and damp, and are more likely to be tubercular than wealthier folk. On this account I will choose the cases in this section from among those in easy circumstances, so as to have the phenomena more pure and simple.

Let us first take a case of acute eating too little—that is a sudden deprivation of food. And let it be remarked that the symptoms are much the most severe and most rapidly induced in those who are already spare feeders—there is no becoming acclimatized to starvation.

CASE CCCXIV.—P. B—, aged 40, is a Bombay gentleman of the Bungun caste, whose ancestors have of course not tasted animal food since a period before the dawn of history. He has been in London on business about a year, and I believe is the first of his race who has in this country retained his ancestral purity of diet. His house is provisioned for a year's consumption with corn, rice, vetches, &c., and these are cooked by a servant of the same caste as himself. In the early part of the winter he suffered a good deal from colds and cough, but otherwise he has been in good condition generally. I am

summoned to-night by his medical man, Dr. Macaldin, on account of a very obstinate attack of vomiting, which has arisen in this way : A fortnight ago his servant played truant and neglected him ; the consequence was a fast for a day or two on dried rice or some such innutritious food ; this induced nausea, retching, and hiccough with muscular prostration. Rest restored him, but on the 9th the receipt of business letters induced him to sit up and use his brains and pen for many hours. This brought back the vomiting and prostration ; nothing will stay on his stomach, and the patient runs considerable risk of being starved. The tongue is furred, the pulse small, weak, and quick, the skin cold ; there is no pain anywhere.

Dr. Macaldin has given him the usual course of pharmacopœial anti-emetics, and they have been simply brought up again. Beef-tea was given in a draught as a drug, but the very smell produced retching, and the patient apparently suspected the contents and refused to take more.

I advise the beef-tea to be given in enema every two hours, and at the intermediate hours an ounce of almond milk with four minims of hydrocyanic acid and the same quantity of laudanum in a draught.

April 22d.—B— called to say that the treatment had been perfectly successful : he had only vomited once after its commencement, and had returned to his usual habits and gradually to business. He expresses surprise at what he considers a slight cause making him so ill, for he says that in his country a man will set out on a long journey and think himself amply provisioned if he has a pocketful of dried peas. I take the opportunity of pointing out the differences which climate creates in the traditions of nations, and that if people change their climate, a modification of traditions is imperative. He agrees to make a main article of his diet, milk, which certainly never had, and never will have an animal life. I then try my argumentative powers on the topic of eggs, which I maintain have only a vegetable life, till the *punctum saliens* is visible. But I fear he considers me sophistical.

In such acute cases as the last the symptoms pass away along with the cause. But it is not so when the abstinence has been continued so long that the morbid processes have become ingrained and habitual.

Where abstinence as a form of devotion is part of the established worship of any religious community, it is usually made the subject of minute regulations, designed with a view of securing practical results without injury to sanitary condition. The principles of these regulations seem to be that abstinence should not be excessive, and above all not continuous. Moreover, the spiritual patient is never to prescribe for himself.

In the Church of England it certainly does not constitute any portion of the regular religious services demanded of its members.

Truly in the homily "On Fasting" a low diet on certain days is urged; but the preacher destroys the force of his advice by inserting the weakening argument that its general adoption would be a great encouragement to our fisheries. The method of asceticism being thus left to individual management, its intention is often mistaken, and its practice abused. Instead of looking upon it as an exercise, as a sacrificial service in its essence intermittent, occasional, and departing from its essence if not intermittent and occasional, they treat it as a means of destroying the instinctive desires—an unwarrantable interference with the laws of God as established in nature.

CASE CCCXV.¹—In February, 1866, an Anglican rector, aged 32, consulted me on account of increasing inability to perform the duties of his ministry. Fits of mental depression more and more frequently came over him, accompanied by a feeling of loss of volition over the limbs. At all times he was weak and incapable of muscular exertion, and was thrown into a cold sweat by any bodily or mental effort. There was loss of appetite, pain at the epigastrium and flatulence after eating, with palpitation of the heart. This local condition of the stomach seemed to have been more prominent a symptom previous to his visit to me, for I remarked that the pit of the stomach had been blistered, by the advice of a former physician I presume. This state of things had been gradually coming on for about two years. He had several times taken short holidays, but with no permanent benefit.

On conversation with him, I found his notion of the relation between soul and body was that of a constant antagonism. It seemed to him that the aim of the former should be to subdue the latter continuously and permanently—not only to knock it down, but to keep it down. He ate merely to enable him to visit and preach and pray; he drank whatever liquid came first; he had married because the world must be peopled, and because he wanted a help-meet in his work. But he rejoiced when his appetite failed, and when he felt no pleasure in his victuals or wish for wine; and as soon as his young wife had borne him two children, they ceased by mutual consent from bodily matrimonial intercourse. The last-named final blow to the flesh had been given four years before.

(*March*, 1867). A year's complete rest, and recurrence to quinine and strychnia, have been necessary before he can be pronounced fit for the duties of his profession, as I have certified him now to be.

I am not fond of preaching, especially to clergymen, or of turning texts into traps; but people should not forget the threatenings at the end of Ecclesiastes, where we are told that God will bring us to judgment and make us account for our missed opportunities of enjoyment, for not being cheerful in our youth and loving the

¹ Case LIX. in 2d edition.

beautiful; and where we are urged on those grounds to "remove sorrow from thy heart and put away evil from thy flesh." Forgetfulness in youth of the Creator and His creatures, disregard of the Giver as exhibited in His gifts, and neglecting to render Him thanks by using them, always entail a punishment on either mind or body. A joyless man becomes an unhealthy man; in body if they are bodily joys that he has foregone, in mind if they are mental.

They are not only religious motives which lead people to place abstinence in the place of honor properly sacred to temperance. Vague notions of its being universally good for the health prevail even among those who ought to know better, if education can teach anything.

CASE CCCXVI.¹—In November, 1856, J. M. V—, aged 36, a mercantile man, who had received a chemical training, came to me for slight flatulence and constipation. I prescribed some myrrh and aloës pills to take occasionally, and saw no more of him then. He went on very well till 1860, when he was persuaded by some foolish friend to adopt a system of extreme abstinence, not that his health was to be called bad, but he wanted it to be better than good. The consequence was a relapse into a state much worse than the first. Three or four hours after eating, flatulence bursting upwards from the stomach, rolling about in suppressed thunder among the intestines, or passing off by the rectum, used to cause great inconvenience, especially by night. And the absence of taste and smell in the evacuated air showed it to be the carbonic acid of decomposed amylaceous food. The nervous system was equally deranged. There was great wakefulness in bed, and an inability to apply the mind to anything by day, which steadily increased upon him, and prevented his attending to his business. I gave him some quinine, and desired him immediately to resume a full flesh diet. A week afterwards he came and said the flatulence and other symptoms were very much better, but the full dose of quinine made his head ache. He was ordered therefore to take only half a grain twice a day, to keep up his appetite to its work; and then he was able to engage again in business so as to think no more about his health.

Sometimes the abstinence, commenced on theoretical grounds, is in quantity only or general; and then all that is required is to advise an additional meal. This is often required in the case of old people whose chewing powers are small.

¹ Case LVI. in 2d edition.

CASE CCCXVII.—Mrs. J—, aged 77, requested my advice on April 29th, 1868, on account of restless nights. She was roused between three and four every morning by severe pain in the left side, extending across the epigastrium and accompanied by great tumefaction and tension. She was seldom able to sleep again, and was getting worn out by want of rest. Occasionally she would have a great explosion of air *per anum*, and relief generally followed. The bowels were naturally costive, and it appeared she had been taking purgative medicine.

Her habits of life were to dine at two, to have a good tea at six, and go to bed at half past ten or eleven.

I advised her taking some hot beef-tea or soup and a wine-glass of whiskey-toddy on getting into bed. But I also prescribed an ether and ammonia draught and a chloroform fomentation to be used, if need were.

At a visit three days afterwards I found she had not used any of the drugs, the light supper having proved quite sufficient alone to prevent the windy spasms.

More commonly the dietary is restricted by one or more of its necessary constituents being omitted from a notion that they do not agree, or from their having on occasions appeared to produce pain or some other discomfort.

CASE CCCXVIII.—(June 2d, 1869.) One of the new species of medical students, a member of the gentler sex, called me in to see her mother, a thin old lady of about seventy. She had suffered many years from great irregularity of bowels; sometimes they were extremely costive, at other times they were relaxed, and the stools were unfurmed, scanty, lumpy, now too dark, and now too light, generally fetid, like those of carnivorous vermin. The urine was generally dark and scanty. Two or three times a month she would have violent attacks of "spasms" accompanied by vomiting, the pain being especially fixed in the right hypogastric region. And during the last attack there was a decided tumor which felt so solid in that part that her daughter was led to diagnosticate the presence of some tissue change around the ileo-cæcal valve. On inquiry I found that our patient had been during some years gradually leaving off one article of diet after another till she took nothing but mutton and stale bread, except a little tea at breakfast. She had from time to time been under treatment, but to no profit.

It was agreed that no drugs should be ordered, but that one copious meal of vegetables only should be taken in the middle of the day, and a meal of various meats at dinner-time.

This was strictly persevered in: I saw her several times in the course of a year, and always with continuous improvement of the digestive powers. She had not any attacks of "biliousness" or "spasms," the bowels became daily responsive, and I heard no more about the ileo-cæcal valve.

Vegetable food is the aliment usually objected to and eliminated from the dietary; because when it is eaten at the same time as

animal food, it is apt in weak stomachs to ferment and cause flatus. The best way to get this necessary article of nutriment taken in such cases is to make it a separate meal, as was done in the past instance.

It may be noticed that in the last case no medicine was considered needful. But this abstinence from the use of drugs is liable, especially in young people, to protract the convalescence. The next patient for instance would have got well quicker with the aid of quinine or some equivalent nerve-renewer than she did without.

CASE CCCXIX.¹—Miss H. W.—, January 28th, 1860. The patient is a very thin, nervous-faced young woman of twenty-three, who complains of a weight at the pit of the stomach, brought on by swallowing any solid. This first began eighteen months ago at a catamenial period, and she immediately persuaded the family doctor to interdict all solid food, and she has taken none ever since. She has lost twenty-one pounds in weight, though never stout previously, and has become dreadfully flatulent and hysterical. The heart had become weak and irregular in strength, and sometimes intermittent.

She was a long time in recovering even under an improved dietary, so that I find noted in April, 1861, that though her muscles had become firm and the general health good, yet there was still some pain at the epigastrium after dinner, which I attributed to tight-lacing.

I attributed it at the time to tight-lacing; but I have seen reason afterwards to view it as one of the consequences of her condition, as a symptom of deficient nerve-power in the stomach, induced by a restricted dietary.

Even in much more chronically ingrained disease than the instances cited, an improvement may be quickened by the aid of drugs, etc.

CASE CCCXX.²—The Rev. J. S.—, a parish priest and Union chaplain, aged 48, in February, 1866, tells me that when reading hard for his degree at the University he first became sensible of pain after eating. His theory was that he ought to eat less; and so he did, less and less; and, with the hope of working a cure all at once, actually lived a whole year on bread and water only. In consequence he is troubled with flatulence, debility, and frequent attacks of palpitation of the heart. The pulse is uneven, and occasionally intermits. As far as I can ascertain by questioning, he feels more pain now after eating than he used to when he began this ascetic life nearly a quarter of a century ago.

A generous mixed diet, taken frequently, with wine, quinine, and

¹ Case LVII. in 2d edition.

² Case LVIII. in 2d edition.

strychnine, while at the same time the over-sensitive nerves were deadened by opium and hydrocyanic acid, enabled me to allow him to return home in ten days; but I of course did not promise that he would ever be the man he might have been naturally under a rational dietary.

On July 17th he tells me he is able to eat more and more without pain week by week. His pulse is regular, and he has no flatulence. He has left off all medicine except a quarter of a grain of opium every night. He is more robust than ever I expected to see him.

The above is a proof how ascetism will be persisted in on theoretical grounds in spite of nature's daily warnings to the contrary, and how unobservant even highly educated people are of physical facts, in which they have a most personal interest.

However, the most striking instances of rational restorative treatment are those where, drugs having failed to give relief, a cure is effected by supplying the very motive cause wanting to elicit the deficient function, gastric juice to rouse the appetite.

CASE CCCXXI.¹—Amelia D—, aged 20, was admitted to St. Mary's June 19th, 1857. On admission her general condition was as follows: *Stature* small; *weight* eighty-four and a half pounds; *complexion* fair; *skin* healthy; *pulse* 92, even, feeble; *tongue* clean, flabby; *bowels* daily; *urine* normal; *catamenia* monthly.

She was well fed, and not overworked; but her employment necessarily confined her a good deal to the house. The thorax was healthy, though she told a tale of having had cough and hæmoptysis.

She complained of pain in the left side, and sickness in the morning, especially after breakfast. Her appetite was very bad, and the sight of food made her gorge rise at it; but still she forced herself to eat.

She was at first dieted on milk guarded with lime-water, rice-pudding and ice, and took a grain of opium every night.

But after five days she was no better, so the opium was left off, and ten grains of Boudault's pepsin powder three times a day substituted for it.

In three days her appetite had returned, the vomiting and nausea had ceased, and she spontaneously asked for meat. She continued taking that with relish and without vomiting.

SECTION VIII.

Climate.

The effect of climate in producing forms of indigestion is most notable in persons of a mucous diathesis—by which I mean persons whose mucous membranes are more than ordinarily liable to have

¹ Case CCXXII. in 2d edition.

their vital functions of circulation and special secretion arrested by the debilitating influence of undue cold and heat. When they are struck by this partial death, what should have been plasma is thrown off as mucus and pus. The stomach, along with other similar membranes, is subject to be so affected; it ceases to make pepsin, it ceases to digest, and further invests the alimentary mass with a slimy indigestible coat of mucus, and impedes its solution in the intestines. Cases where the commencement of the dyspepsia was attributed by the patient to so-called "catching cold" has been several times cited for other objects (as Cases CXCIV., CXCVI., for example, to go back no further); and in short the union of cold and damp found in an ordinary English winter is the most common exciting cause, discovered by the patients themselves.

CASE CCCXXII.¹—Henry L—, a schoolmaster, first made himself ill at the age of 28 by reading too hard for an University degree. His nervous system was completely prostrated. This was at the end of the summer of 1860. In the succeeding winter he began to feel a weight at the epigastrium after eating, and a strange kind of vertigo, as if the ground were falling away from under his legs. He would have sudden flushes and perspirations. If he could eructate any considerable amount of flatus there was an immediate relief to the symptoms. His nights were disturbed by cramps and by wind rolling about in his bowels, as if they were going to act. But no, they were constipated. He found acid often rising in his throat, and occasionally vomited a mass of stringy mucus. During the summer he was much better, and he was able to play at cricket, but when I first saw him, in December, 1861, his old miseries were returning with double force. He was getting very weak and nervous, his tongue was white and tremulous, his pulse very rapid, and he said that occasionally he was quite hysterical. Iron did not seem to suit him, in spite of the evident anæmia. But quinine regularly, and *pro-re-natâ* doses of valerian were of use. He has diligently gone on with occasional courses of this treatment, and suffers very much less. He is quite well every summer, but at the beginning of each Christmas holidays he is threatened with a relapse, and comes to be encouraged to ward it off.

In the last case the failure of the nervous system was a cause of the failure of the digestive powers, but the wheel of events sometimes turns the other way round in this class of cases which are affected as now described, by climatic influences.

CASE CCCXXIII.²—Mrs. R—, aged 34, the mother of four children, is the wife of a thriving tradesman, and certainly as little exposed to

¹ Case XXIII. in 2d edition.

² Case XXIV. in 2d edition.

any strain on the mental powers as any one I know. But she is fat, leuco-phlegmatic, subject to leucorrhœa and to mucous discharge with prolapsus of the rectum. She is costive, and was much in the habit, till I told her not, of taking purgatives. She complained of pain and gastric flatulence an hour or so after food, but more especially of general flatulence at night, and said that whenever she suffered in this way she got hysterical and low-spirited. She had observed this to be especially the case in autumn, and certainly that has been the time of year at which my prescriptions for her are dated, at least since 1862. In winter and spring she does not suffer so much, so I see nothing of her.

The last-named fact of the patient not suffering so much when the weather is once established, makes one conjecture it may be the changes of temperature rather than the mere degree of cold which is to blame. Thus it was in a stomach originally injured by an acrid poison.

CASE CCCXXIV.¹—Eustace G—, an active manufacturer, aged 25, consulted me in November, 1863, about amylaceous dyspepsia first induced by the vomiting, consequent on an over-dose of aconite, in which drug he had been in the habit of indulging. He said he always suffered in the stomach on change of weather of any sort.

I gave him some bismuth and iron to take twice daily, and in returning to see me about another complaint (April, 1867) he tells me he took it for a year and a half with complete success. His stomach is now quite strong.

Remark here the power of resistance to noxious influences which was gained by the use of iron.

Sometimes this influence of the weather is a considerable help to the diagnosis of obscure cases.

CASE CCCXXV.²—In November, 1856, Miss D— came to me complaining that in wet weather she always became constipated. On further inquiry this constipation seemed due to a general catarrh of the mucous membranes with amylaceous flatulent dyspepsia.

Closely connected with the influence of weather is the influence of locality.

CASE CCCXXVI.³—Rev. T. K—, aged 52 in August, 1863, has a low-lying damp living in the West of England. Three years before I saw him he had begun first to suffer from flatulence, with nausea, and acid rising in the throat three hours after food. He got so emaciated

¹ Case XXV. in 2d edition.

² Case XXVI. in 2d edition.

³ Case XXVII. in 2d edition.

that he was frightened, and left home for a couple of years, during all which time he remained quite well. On returning to his parish he remained well for a year, but then back came all his old complaints, accompanied by waterbrash in the morning.

A soft relaxing air is as bad as a cold one.

CASE CCCXXVII.¹—Miss A—, aged 25, suffering the usual symptoms of slight amylaceous dyspepsia, usually lives at Ryde. She tells me, June, 1862, that she is always better anywhere else, and the statement was confirmed by her brother, an old consumptive patient of mine, with a vomica in his lung. They go there, he said, for his benefit and leave for hers. I do not think it suited either one or the other.

But of all damp places those infested with the malarious poison are the worst; there is a double fount of evil.

CASE CCCXXVIII.²—Stephen A—, aged 54, an active, well-to-do farmer from the marshy neighborhood of Colchester, came to town to consult me May 24th, 1860. He stated that he had always been a temperate man, and appeared to speak the truth. He had suffered from weight at the pit of the stomach, especially in wet weather, for near upon ten years, and at various times has occasionally thrown up some stringy phlegm from the stomach. In the summer of 1859 he had rather a severe touch of ague, which pulled him down a good deal, and he had never been quite the same man since. The stools were sometimes "yeasty," sometimes dark, rarely natural. Since his ague, he had vomited every other day, and at the time of the vomiting had a spasmodic pain just beneath the ensiform cartilage. He occasionally had vomiting and occasionally had pain at other times, but seemed pretty clear as to their general tertian character. I ordered him five grains of quinine every night and morning, and as I did not hear of him again I presume it was sufficient to effect a cure.

An atonic condition of the stomach and digestive organs is sometimes induced by sea-air and sea-bathing. Example:

CASE CCCXXIX.³—Miss Dinah J—, aged 18, was placed under my care December 1st, 1866, complaining of complete anorexia and nausea at the sight of meals. If she forced herself to take it there was an immediate feeling of weight, and the victuals often returned tasting as when swallowed, "very nasty," and mixed with phlegm. Vegetables, especially potatoes, caused a good deal of swelling of the belly and wind. These symptoms came on gradually during an autumnal visit to some friends at Ramsgate, when she accompanied them in their sea-bathing, though confessing she found herself worse

¹ Case XXVIII. in 2d edition.

² Case CCXVII. in 2d edition.

³ Case XXIX. in 2d edition.

after each bathe. Before she went to Ramsgate she was in fair health, but had never been well since, and had grown low-spirited and hysterical. The catamenia, however, continued regular and sufficient, as they had been since the age of fourteen. And though her tongue and the inside of her lips were anæmic, she still retained in her cheeks the warm coloring of a highly developed brunette. The heart and lungs were quite healthy. I ordered her to remain in London and to take twice a day six grains of citrate of quinine and iron. On December 27th she came to report herself as having recovered her appetite and spirits, bringing with her one of her Ramsgate cousins, who said she had known several instances of persons of their nation (they are Israelites) who had suffered in the same sort of way from sea-bathing.

This should be a warning that sea-air is not an universal tonic, as the public rate it.

In a clearer climate, as in shores washed and dried by a saltier sea than the Atlantic and Northern Oceans, the mucous membranes retain a more vigorous vitality, and hence islands and the seashore are more universally advisable residences for those who cannot well bear our climate. In the neighborhood of the Mediterranean the dryness of the air without excessive heat or cold renders it needless for the mucous membranes to put on their slimy winter coats. They are in a more active condition for the work of absorbing oxygen, digesting, extracting nutriment or water, or whatever else they are required to do. They are filled with blood, and pass it on rapidly with its fresh burden of renewed life to the rest of the body.

Compare, for example, the amount and the intensity of such a disease as chronic bronchitis in Italy and in England. At St. Mary's Hospital, London, in the patients admitted between 1853 and 1861 inclusive, 1 in every 32 was a case taken in for chronic bronchitis. In the statistics of Milan Hospital there is only 1 in 8823.¹

Take the following example:—

CASE CCCXXX.—Miss B—, aged 53, applied to me June 25th, 1867, concerning a pain extending backwards from the epigastrium to between the shoulders, constant when the stomach is empty, and accompanied by a sensation of weight, as if it were full. It was stated to be relieved by eating. She has suffered from this regularly for many years every spring, or in very damp weather at other seasons. But some time ago she was resident in Malta for a few years,

¹ "Some Effects of the Climate of Italy," by the author, p. 41.

and during that period she was quite free from her gastric complaint, which I conjecture was purely catarrhal.

A fortunate circumstance it is that in the warmer parts of the temperate zones chronic derangements of the digestive organs are not so common as they are with us, for so much of their diet necessarily consists of starchy food, that if they could not digest it they would be badly off indeed. The dietary suits the climate, and even travellers will find it best to approximate their habits to the natives. In South Italy new arrivals are often heard exulting in the improved digestive powers which enable them to eat meat dishes at breakfast, and to take toll from each passing delicacy at the table-d'hôte. But you will soon see them returning to tea and toast at the one, and restricting their performances at the other more and more to the vegetables and the maccaroni.

I cannot say I agree with those who attribute to this vegetable diet the comparative freedom from indigestion; such an argument seems to me a confusion of cause and effect. For we all more or less, I suppose, admit the value of meat diet in curing such complaints. The freedom seems to me the rather due to that vigorous condition of the mucous membranes which the climate insures.

Residence in tropical climates does not seem to produce the lighter forms of indigestion, unless, as in the following case, there has been some inflammatory injury to the bowel which has left its stains behind.

CASE CCCXXXI.¹—Robert C— came to me in January, 1863, suffering from chronic flatulence, to which I could assign no other cause than his having had dysentery in Ceylon three years previously. He says he thinks acclimatized Indo-Europeans in general are very good hands at digesting their victuals.

This should more properly be classed along with Cases XXXIII. and XXXIV., where there was no external cause discoverable, and the dyspepsia is rather to be called constitutional, as arising out of a morbid state of body.

SECTION IX.

Disease of the Lungs.

The form and degree of indigestion which is associated with the "strumous," "rickety," or "tuberculous" constitution, has often

¹ Case XXX. in 2d edition.

been described by authors. By none, probably, better than by Dr. Todd, in the "Cyclopædia of Practical Medicine." In this volume it is compendiously exemplified in Case XXXIX., which exhibits all the usual marks of the morbid state. It cannot be said that the struma is a *cause* of the dyspepsia, for, in point of fact, the dyspepsia either is coincident, or comes first in order of time. But I have already stated that there is a derangement of the gastric functions which really seems to follow tubercle, and that not tubercle of the alimentary canal, but more especially tubercle of the lungs. The irritation¹ of the reflex pneumogastric nerve, which arrests its functions to the extent of inducing bronchial congestion and mucus, is reflected often on the stomach at the same time. And hence you have that condition usually designated as catarrh, the milder manifestations of which were shown in the last section, and the longer continuance of which from a permanent irritator (like tubercle) becomes a serious complication of pulmonary consumption.

CASE CCCXXXII.—Miss Ada D—, a clear-skinned girl, with a white and pink doll's complexion, fine hair, and long eyelashes, aged 20, was brought to me June 4th, 1868, complaining that for some weeks past she had begun to fall away in flesh, and that the catamenia which should have appeared in May, had missed their appointment, having previously been always punctual. These symptoms were attributed by her parents to the very small quantity of food she had taken during all the spring. She had such an entire want of appetite, and eating was followed by so much nausea and pain at the epigastrium in about half an hour that she really did not take enough to support life. Meat, for example, was entirely left off, and only biscuits and tea constituted the meals. She had no vomiting. In fact at the first visit I heard of nothing to direct attention to the lungs. Shortly afterwards I heard of feverishness in the evening, and then of nocturnal sweats, which as well as cough had been going on for some months, but were stated to have been the better since the dyspeptic symptoms had supervened. An examination of the chest showed the upper ribs of the left side to be quite immovable from the solidification of the lung beneath. There was a moist crackling with the respiratory murmur.

In August the appetite began to get somewhat better. At the same time the chest symptoms became more marked. She was then

¹ Abnormal irritation of a nerve is partial death. Even such a slight irritation as tickling reduces sensibility; and Dr. Heidenhain of Breslau finds that it also causes a rapid diminution of the blood-heat, amounting, in some experiments, to as much as 0.9 deg. Fahrenheit. (*British Medical Journal*, December 18th, 1869, page 658.)

put under the care of a physician famed for the treatment of phthisis, and I did not see her again; but I hear some months afterwards from her father that under this gentleman's skilful care she got much stronger. A somewhat similar case is recorded in Case XXXVII.

In the next a further development of the gastric disturbance is exhibited in the shape of vomiting. I call it a "further development" as being a more marked symptom, but I cannot say it is more obstinate than the lighter and commoner derangement.

CASE CCCXXXIII.¹—Cyrus K—, aged 22, came in July, 1855, with a complaint of languor, sleepiness of an afternoon, weight at the epigastrium an hour or two after meals, and occasional vomiting in the morning. He had had a good deal of hard work latterly, and attributed his indigestion to that. But his mentioning a cough induced me to examine his chest, where I found marked deficiency of respiration and dulness in the apex of the left lung, and crackling in the lower lobe of the same side. He was also a good deal emaciated, and he owned to having spat blood before he was ill. I thought there was tubercle just beginning to soften; gave him for a time lime-water and milk, cod-liver oil, and steel wine after meals. And then I urged him to go to the West Indies, where he had connections, for the winter.

In October, 1861, he came again, telling me that he had gone to Bermuda and stayed, not only for the winter, but ever since; and had, as long as he remained in that climate, no indigestion. In 1858 he had spitting of blood, and he had yellow fever in 1859, but had grown fat in spite of them; and he continued well till he was now come to England, where, after a few months' holiday, he found his old dyspepsia returning, and was wisely resolved to go back to his more appropriate home. There was crackling in the apex previously dull, but I do not think the lungs had got materially worse.

He remained well till 1866, when he caught typhus fever and died.

In a former edition I inserted the following case as an instance of arsenical poisoning, but I have since learned from a naturalist who suffered severely from sleeping in a room with bird skins prepared with arsenical paste, that the symptoms of that disease² are quite different; and I find that tubercular patients are apt to suffer most at night, as this one did.

CASE CCCXXXIV.³—Charles W—, a patient with tubercular lungs, who used to consult me in the spring of 1862, had lodgings by my advice at Greenwich in an open situation for the sake of the air. He seemed to get all the worse, and took to vomiting in the morning,

¹ Case CCVII. in 2d edition.

² "*Disease*"—according to the nomenclature of the College of Physicians—poisoning by arsenic is a "*disease*."

³ Case CCXXI. in 2d edition.

and having pain in the epigastrium. He always felt so much better during the day, and got so much worse during the night, that I was led to inquire more particularly into the peculiarities of his lodgings. I heard his bedroom was colored green, and on his bringing by my desire a piece of the wall paper, I found it tinted with a light powdery arsenite of copper. He lost the dyspeptic symptoms when he changed his apartments.

CASE CCCXXXV.¹—An unmarried lady of 32 was sent up to town for my opinion by Mr. Gardner, of Painswick, May 22d, 1863. She had been ill since the previous October with vomiting after meals. The food returned at short intervals in mouthfuls in an undigested state. The matters rejected were almost always free from acidity. Sometimes this would begin in the morning and continue all day, sometimes would not come on until the evening.

She had a slight feeling of weight or oppression at the epigastrium, but there was no distension or tenderness.

Her general health had not suffered much, the menses remaining regular, and at those periods she thought she was better. Though she had some cough, it was not a marked feature in the case.

On examining the chest, I found evidence of crude latent tubercle in the lungs. There was deficient respiration in the right apex, and a bronchial interrupted expiration in the left.

That the degree of dyspepsia and the degree of tuberculosis are not proportioned to one another is obvious from this and previous cases. Perhaps the advance of tubercle in quantity or condition, especially its advance to the stage of softening, destroys the nerve fibrils which had previously reflected the morbid action.

In fact dyspepsia is more peculiarly a symptom attached to an early stage of pulmonary tuberculosis. The succeeding cases exhibit the coming on of vomiting in consumption, coincident with the first hæmoptysis.

CASE CCCXXXVI.²—Emma K—, aged 25, was sent from a penitentiary to St. Mary's Hospital, on account of her failing health, July 22d, 1853. She described herself as having been weakly for a couple of years, but had no marked symptoms till a fortnight before, when she began coughing up blood. At the same time she commenced vomiting, and continued to throw up everything she took. She was rapidly losing flesh.

On stethoscopic examination the apex of the right lung was found dull and very painful when pressed.

Gallic acid (for the hæmoptysis), hydrocyanic acid, morphia, quinine, were severally given, without any advantage to the sickness. Chloroform in eight-minim doses was of temporary use, but the most

¹ Case CCVIII. in 2d edition.

² Case CCX. in 2d edition.

effectual remedy was opium in grain doses. Under this her sickness ceased, and she immediately began to gain flesh and strength, and left the hospital in fair condition August 26th.

With the vomit there was at first a good deal of light green fluid, probably blood swallowed and digested.

CASE CCCXXXVII.¹—Bridget S—, a domestic servant, was admitted to St. Mary's January 26th, 1857, with pulmonary consumption of eighteen months' duration. It had begun with hæmoptysis and vomiting. The vomit usually was merely the contents of the stomach, but sometimes she brought up clots of blood at the same time.

In the more advanced stages the vomiting occurs only when the body is weakened by toil in addition to the morbid state of the viscera.

CCCXXXVIII.²—William J—, aged 21, was admitted to St. Mary's August 21st, 1857, for pulmonary consumption of two years' duration. (The upper part of the chest was much flattened, and the shoulders drawn forwards; there was bronchophony and bronchial breathing, and various creaking râles in the apices of both lungs, most in the right.) He suffered from several dyspeptic symptoms, and among them from vomiting. He stated, however, that this latter only occurred if he attempted to move about and take bodily exercise after meals.

He was able to keep down cod-liver oil if he remained quite quiet afterwards; and upon that, and iron after meals, he gained two pounds in weight between August 28th and September 5th. He was then treated for a week with hyposulphite of lime (eight grains three times a day), but gained only one pound in that time. His sickness never troubled him as long as he kept quiet and rested in the hospital.

A different form of phthisical vomiting, sadly common, is that which occurs in an advanced stage of large vomicæ, from the nau-sousness of the sputa. It is very distressing to the patient; and almost equally so to the physician, for his remedies afford little or no relief.

This vomiting is more frequently found when the vomica occupies the lower or middle parts of the lung than when it is at the apex, for the reason that in these first-named situations the cavity is more apt to eat itself into the neighborhood of the ribs, and it is the contact of bone which makes the pus grow so horribly fetid.

¹ Case CCXI. in 2d edition.

² Case CCIX. in 2d edition.

CCCXXXIX.¹—Captain H—, a man of fine build and healthy descent, aged about 36, came under me in August, 1862. He had long been subject to cough, but had never spat blood. His complaint was of considerable pain in the right side, which, as an old Indian, he attributed to what they call “liver.” In the lower lobe of that lung there were dispersed cracklings to be heard with the ear, and there was slight general dulness on percussion diffused through the lobe. This was in front; behind the sounds were healthy. The sputa consisted of transparent mucus.

Leeches and chloroform considerably relieved the pain for the time, so I suppose it was dependent partly on pleural inflammation.

In October of the same year his pain in the side was less sharp. The expectoration and cough were worse. There was very marked dulness with absence of respiration in the right infra-mammary and infra-seapular regions. He went to the South of France for the winter.

In the May of 1863 I saw him again. He suddenly, during a violent fit of coughing, had thrown up a pint of pus, and continued coughing it up. If the cough ceased for a little time, the pus would collect, and then, on being expectorated, tasted and smelt so intolerably nauseous that vomiting invariably was produced. This took place always every morning, when the matter had collected during the night.

I one day examined some of this fetid sputa under a microscope, and found pus-globules of various sizes, some regular and normally granular, some swollen and exhibiting their nucleus, fat in globules, granular masses (? rotten fat), tabular crystals of cholesterine, and spicular crystals which my microscopie lore was not sufficient to enable me to identify. It was anything but “laudable.”

Poor Captain H— was very patient, but a more distressing case I have rarely seen, so excessive was the disgust from the constant vomiting and fetor of the expectorata.

He got a little better for a time at Malvern in the summer, and was kept from sinking by cod-liver oil and quinine. But the abscess or vomica never healed up, and continued to secrete fetid pus. The dulness on percussion also increased in extent, so that there was scarce any breathing over the whole lung; I supposed that a fresh deposit had taken place of tubercle, or whatever other matter solidified the pulmonary tissue. He died at Lisbon the next winter in an extreme state of consumption. However, he never had any diarrhoea.

The vomiting and fetid expectoration never seemed bettered by any medicine, except perhaps quinine, and that he could take very little of, such a headache it gave him.

It is impossible to bring to bear on a pulmonary lesion any of the usual applications that surgeons make to fetid abscesses; or else in such a case as the above, one would be glad to use them. To bore an opening through the thoracic walls would probably be

¹ Case CCXIII. in 2d edition.

a great comfort to the patient and a prolongation of life; and I should be glad to find the operation consented to. But it is impossible conscientiously to speak of it as likely to effect a cure, and naturally the knife is shrunk from—I do not expect ever to try it.

The use of opium for the relieving of vomiting in phthisis is very marked, as was illustrated by Case CCVI. For the general dyspeptic symptoms I usually give quinine and strychnine. But it is always right to make a trial of cod-liver oil. If the patient can overcome the nausea excited by the idea of taking it, the good effect is most marked, even in such a symptom as vomiting. The following case illustrates this as well as other parts of the subject.

CASE CCCXL.—An unmarried lady, aged 31, was sent to consult me by her father, a medical man in Northumberland. Her face was thin and anxious, her manner short and irritable, her pupils dilated. She told me she had been ill for seven years past with frequent pain in the epigastrium, which had increased in frequency, so that at the date of her first visit to me, October 11th, 1867, it was nearly constant. She affirmed it to be this which had so worn her down, for that she used to be plump and well-favored in former years. The pain bore a close relation to her meal times, it was always increased either immediately afterwards, or within an hour and a half. During the current twelvemonth she had gradually fallen into the habit of vomiting, and when I saw her she seldom got through the day without this happening after some meal or another. Violent retching sometimes brought up small quantities of blood, but there had never been one of those gushes which peculiarly distinguish hæmatemesis, and I had no evidence that the blood did not come from the respiratory organs. She also occasionally had waterbrash of a morning, and made the curious observation, of which she felt quite sure, that when she had waterbrash the other symptoms were lessened in severity. During the autumn the pain seemed to extend lower down, and was experienced even below the navel. On examination, however, by the hand I found that pressure in that place did not increase it, though such was the ease at the pit of the stomach. So that the lower sensation most probably was due to the strain of the abdominal muscles by the effort of being sick. The excretive functions of the bowels, uterus, and kidneys were reported normal.

I prescribed, first, quinine with hydrocyanic acid, which did not effect much. Then looking to the dilated pupil (though her manner was not hysterical) I desired her to take a shower-bath at noon daily. She seemed no better or worse for it.

Then it came out that she was subject to cough of a winter, and some years ago had spat blood. This led to my ausculting her chest, and finding what I thought to be evidence of scattered tubercle, in a hard dormant state, in the superior lobes of the lungs. (I have no notes of the signs on which I based my opinion.) This was on October 30th, and she began to complain that her three weeks

obedience to treatment had not done so much for her as she had hoped. The pain, nausea, and vomiting still continued.

By way of experiment almost I requested her to try and get down a dessert-spoonful of cod-liver oil twice a day with each dose of the quinine, at times as far distant from meals as possible. A week afterwards she trotted into my study in excellent spirits, to tell me that the oil not only did not nauseate, but had cured nausea; for from the hour of her taking the first dose she had never vomited, nor felt inclined to do so. Moreover the pain was rapidly abating and her natural appetite returning. She was off in a few days to her bleak Northern home. I advised her to carry back a good supply of the excellent, tasteless and colorless oil which the better chemists now provide in London.

That cod-liver oil should cure nausea is an unexpected pleasure. But I should not advise putting the stomach to too severe a trial. It will be read that here I directed it to be taken at a time distinct from the meal times; for by mixing with food recently swallowed eructations are more frequent and nastier; and they may be usually quite avoided by choosing for medicine time an hour equally distant from two meals and by biting a piece of dried orange peel before and after the dose. I think too that the oil is more directly restorative when taken as a sort of intermeal or extra meal. The more devoid of taste and color and smell cod-liver oil is the better for all purposes.

It is not the tubercular constitution, but the pressure of the tubercle upon the bronchi, which, in a weakened condition of stomach, induces vomiting for the same symptom may be produced by a similar mechanical, though different diathetic state, as, for example, by emphysema pulmonum:—

CASE CCCXLI.¹—Jane K.—, aged 27, having had a distorted spine from childhood, it was impossible to ascertain precisely the anatomical condition of the lungs; but, as the heart was healthy, the probability is that the shortness of breath she suffered from arose from pulmonary emphysema. The reason of her coming into St. Mary's in June, 1856, was frequent vomiting, which exhausted her very much. This did not occur in any relation to meals, but at night. She was benefited by hydrocyanic acid, a jalap purge, and a fortnight's rest; after which she went out without complaint.

It is worthy of remark how the worst time of the twenty-four hours for the lungs of the broken winded is also the worst for their stomach. It is at night that their paroxysms of dyspnoea come on, and at night this woman had hers of vomiting.

¹ Case CCXVI. in 2d edition.

Dr. Hyde Salter, in his useful monograph, remarks: "It is very rare to see an asthmatic with a perfectly sound, strong stomach, about which he has never to think, and in the history of whose case dyspepsia has no place. Sometimes the dyspeptic symptoms exist in a very aggravated form, and they are frequently such as to imply that the stomach disturbance is one of deranged innervation—that its sensibility, or its movements, or the nervous superintendence of its secretion is perverted. In these cases the stomach and lung symptoms are part of one morbid condition; the whole thing is deranged pneumogastric innervation, the dyspeptic symptoms being the manifestation of the gastric portion of this deranged innervation, and the asthma of the pulmonary portion of it." He gives then a good example of the alternation of the diseases, asthma and vomiting.¹

Cases of emphysema producing vomiting have already been cited in a former chapter (Cases LXXIV. and CCVII.), and it was also observed in Case LXXIV. that liquids disagree more than solids with emphysematous and cardiac asthmatics.

SECTION X.

Compression of the Stomach.

One wet winter day at Florence I had been spending the morning in the studio of a sculptor of world-wide reputation. We had discussed the perfection of female beauty, and I felt that I was sitting at the feet of a thinker, as well as an "*elegans formarum spectator*." In the evening we met at a hospitable palazzo, and under cover of the waltz music from a quiet corner of observation saw whirling by us in the flesh much that we had been thinking of in the marble and the clay; and both our eyes could not but follow one particular face, famous for the assistance its great natural beauty received from art. "Face," I said, but the mind of Hiram Powers was penetrating deeper, for he exclaimed, after a short silence, "That is all very well, but I want to know where Lady — puts her liver!" Where, indeed! for calculating the circumference of the waist by the eye, allowing a minimum thickness for the parietes of the chest, an area for the spine, œsophagus, vena cava, and aorta, the section of the waist seemed to admit of no

¹ Salter on Asthma, Chapter XII., Section a.

room for anything else at all. In such a body the liver must be squeezed down into the abdomen, elbow, like a big bully, its hollow neighbors, and infringe upon their shape. Fortunately for itself it is singularly tolerant of pressure, and may be deformed out of all recognition by the anatomist of external forms, without ceasing to do its duty as a bile maker, as may be seen well displayed in Dr. Murchison's graphic wood-cuts in the "Medical Times" for March, 1867. But yet the whole portal circulation must be carried on under great mechanical difficulties, the due supply of arterial blood reduced, and its return by the vena cava resisted. What an inconceivably tough person that must be who does not become pot-bellied from the downward pressure, red-nosed from the hepatic obstruction! And must not, therefore, the style of dress which gives birth to such deformities be an abomination and an eye-sore to the artist?

The organ most deserving pity is the unresisting stomach, which is dragged and pushed out of all form during the continuance of this packing process. The longer the continuance the more it suffers. If it is constant, we get cases like the following:—

CASE CCCXLII.¹—Emily K—, aged 16, was a full-grown woman, in form, and had been catamenial for three years; but when admitted to St. Mary's in March, 1864, she was still wearing an old tough black pair of stays made for her when a child. The consequence was that she had never been thoroughly well all that time. The catamenia occurred every three weeks, and, for a girl of her age, were at first profuse, lasting six days; but latterly they had lasted only three days. She had constant pain after eating, frequent vomiting, and frequent rising of the food in the throat, on which latter occasions it was sometimes tinged with blood, especially at the menstrual periods. This constant ill-health had made her thin and hysterical, but her lungs, heart, and indeed all the solid organs seemed perfectly normal. When admitted she was vomiting all her meals. At first she had hydrocyanic acid, but was no better in any respect for it; but on the 6th of April she was put upon a course of cold shower-baths every morning, with valerian three times a day. This, with the removal of the obnoxious stays, seems to have been immediately effectual, for on the 12th it is reported she had not vomited for two days, and on the 18th she was discharged "cured."

"Cured"—of her stays. Easy task in such a case as the above, but presenting insuperable difficulties much more often. Women have a very strong won't.

CASE CCCXLIII.²—A woman, aged 28, was brought to me in August, 1859, by a gentleman whose mistress she then was. She had

¹ Case LXIX. in 2d edition.

² Case LXX. in 2d edition.

borne several children in the course of her career, but still retained a beautiful slim figure which she had when a maiden. This she had accomplished by bandaging very tightly after each confinement, and sternly refusing to have any change made in the shape of her corsets. The consequence was that for several years she never took a meal without throwing some of it up afterwards, and suffered from obstinate constipation, for which she was in the habit of using violent purgatives. She seemed quite as aware as I could make her of the cause of vomiting, but resolutely refused to do anything which might imperil her outline. In fact, she implied she lived by her beauty, and intended to keep it at all hazards: and I do not know how to answer an argument of that sort.

Besides vomiting, a general sensitiveness sometimes becomes fixed in the tributaries of the solar plexus by the constant application of external pressure. The following interesting case seems in point:—

CASE CCCXLIV.—Emma R—, a maiden of 50, no longer catamenial, was sent to me on the 21st of October, 1867, by Dr. Moore, of Hastings, for obstinate vomiting of three years' duration. The rejection of the food occurred immediately after swallowing, was always after breakfast, and occasional only after other meals, was quite easy, and unaccompanied by any nausea or straining. She was enabled to return home well on the 12th of November, by dint of daily shower-baths, and rubbing the belly with chloroform and laudanum. She also took some quinine and valerianate of ammonia; but I think shower-baths were the most efficient remedy. The peculiarity of the case was the presence of extreme sensitiveness in the parietes of the abdomen and bowels; food inside and pressure outside equally gave pain. Manual examination of the epigastric, umbilical, and hypogastric regions seemed to convulse her with agony. I could not for some time trace out the cause of this, till I accidentally found that her usual wear was an old-fashioned pair of stays with a great timber busk, against which she leaned when she felt tired or faint. Her neat modern corset had been put on specially for her visit to me.

I can hardly doubt that cases like the above quoted are to be classed along with hysterical pains in the joints, spine, uterine ligaments, &c. They occur in parts which accidental circumstances have caused to be peculiarly pressed, strained, or dragged upon. If a weakly girl of hysterical temperament has got a bad habit of standing on one leg, she gets hyperæsthesia of the knee or hip; if she sits at the piano in a constrained posture for many hours daily, the ligaments of the spine become over-sensitive, and a few years ago she would have been put in irons for threatened curvature—indeed she is not quite safe even now;—if she habitually adopts postures which allow the womb to drag always on its ligaments,

she suffers pain in the genital organs, and is persuaded by her female friends to be treated for all sorts of terrible complaints. Just so constant pressure on the surface of the belly, while it may in one instance produce tissue lesion, may in another of peculiar temperament induce only hyperæsthesia.

Hysteria is, nine times out of ten, a disease of the digestion.

In these cases the principal difficulty lies in the diagnosis of the true cause of the evil. Asking questions is useless; "*aucune femme ne se serre,*" remarks M. Chomel of his countrywomen,¹ and I am sure we may say the same of the confessions of ours. Moreover, if you try to detect them by passing your hand underneath the stays, as M. Chomel used to do, they sting in, and defend the honor of their corset by a fraudulent kind of gymnastic. So you gain nothing by what is, in truth, rather a rude proceeding. The best way is to make an excuse to have the clothing taken off and observe whether it has crumpled and marked the skin by pressure; then to desire the patient to take a full breath, and notice whether the lower ribs are duly expanded, or whether the intercostal muscles and diaphragm have lost power by misuse.

By that means you can find it out when the tight-lacing is still continued at the time you see the patient. But in most cases it has been left off on account of the increasing pain it causes, and a suspicion that it causes the other symptoms as well; or perhaps it is temporarily left off for the visit to the doctor. And I suspect that such is the case with a large proportion of the instances of habitual vomiting, soreness of epigastrium, of hæmatemesis, of ulceration of the mucous membrane, flatulence, and hysteria, which come before us. These symptoms are most common in the other sex—why? because their reproductive organs differ from ours? Surely not, or we should find the same peculiarity universal among females throughout the animal kingdom, or at least throughout mammals. Yet we read in veterinarian pathology no hint of a distinction between the stomachs of our bulls and of our cows. Is it not more reasonable to conclude that the important difference lies in the clothes, which we can see, rather than in some mysterious invisible influence of the generative viscera over the digestive, of which there is no evidence?

¹ "*Les Dyspepsies,*" p. 251.

I should, therefore, in all women where these symptoms appear, suspect at least, for no harm is done by the suspicion, tight-lacing, though I should not find it still persevered in or confessed.

As an alteration of form is sometimes diagnostically useful, it may be mentioned that the prominent abdomen of a tight-lacer generally sticks out straight from above the pubes, sometimes overhangs it: that of a naturally short-bodied stout woman slopes up to the umbilicus at an angle of 45° .¹

In a long-bodied woman, such as in the Phidian proportion, the abdomen ought to be flat.

In men there is not the same temptation to compress the viscera for ornamental purposes among those who have the regulation of their own dress. But it has often struck me that the tight trowser-bands and buttoned-up uniform jackets, which French schools delight to enforce, must be very unwholesome, independent of the impediments they offer to cricket and foot-ball. One does not wonder at the pale, greasy, old looks of the poor lads. They must certainly suffer from indigestion, and probably it is this chronic ill-health which induces certain obscene habits said to be common amongst them.

Indigestions such as I have attributed to the pressure of stays in women, are common in one class of men, namely, cobblers; arising in them from a cause of physiologically exactly the same nature, the compression of the epigastrium by the last on which the boot or shoe is worked, producing on the stomach just the same effects as its compression by the liver in cases of tight-lacing. The following history shows the result in an incipient stage:—

CASE CCCXLV.²—Joseph James D—, aged 19, just out of his apprenticeship to a shoemaker, was admitted to St. Mary's Hospital under my care October 13th, 1861. He complained of weakness in the wrists, which became painful after work, and of constipation; he spoke also of pain in the chest, which induced us to examine his lungs. These organs, however, were found healthy, and he had no cough. On further inquiry it appeared that the pain he spoke of was in the epigastrium, and was increased by pressure and by taking food. Rest and quinine improved him rapidly, so that he was made an out-patient within a week.

Remark how soon the evil had commenced, on the very threshold of the life the poor lad had chosen!

¹ See Albert Durer's "Outlines of Proportion."

² Case LXXI. in 2d edition.

The loss of power in the wrists, arising from atrophy of the muscles in overworked parts of persons whose stomachs do not take in a sufficient supply of nutriment, in some instances proceeds to a much greater degree; and there is a case recorded somewhere in my St. Mary's notebooks of a shoemaker in whom the two arms, even to the deltoids, were completely paralyzed by overwork in giving that artistic jerk to the thread which these workmen affect.

The next case exhibits a further stage of the same condition.

CASE CCCXLVI.¹—Philip B—, aged 36, shoemaker, was admitted into St. Mary's under my care November 9th, 1855. He had not been in health for nine years, suffering from what he called "spasms in the chest," that is, pain across the epigastrium, and irrepressible paroxysms of belching. The pain in the epigastrium was always increased immediately after taking food, and was accompanied by a great secretion of gas. When he could get off some of this by eructation, the pain somewhat abated; but the eructations would sometimes continue as long as three hours. During the last nine months he had become emaciated, and felt a good deal of universal debility. The urine was smoky-colored, of the specific gravity only of 1.010, though natural in quantity and free from albumen; the sleep was broken, the appetite good. He stated that unless he took purgatives his bowels would remain unopened for a fortnight together.

Philip's first medicine was bismuth and iron. But the iron did not seem to agree with him; he got into a feverish catarrhal state and had sore throat. During this attack he was kept in bed, had six leeches and afterwards a blister applied on the epigastrium, and took a quarter of an ounce of castor-oil occasionally. All this time, however, he was gaining flesh; so that between the 27th of November and the 10th of December he had gained four pounds in weight. And the urine was increasing in specific gravity, so that by the 1st of December it was 1.028, but was a little cloudy from lithates. After the acute febrile symptoms had abated he received much comfort from the following draught three times a day, viz.,

R.—Mixturæ rhei co., fl̄j.
Tincturæ opii, ℥v.
Acidi gallici, gr. v.

He left on December 13th, much improved in health and spirits.

In this instance it will be seen that the evil was much more ingrained by time, and the symptoms were worse and more difficult of relief in proportion to the greater time it has lasted.

The intention of the draught was to soothe the over-sensitive nerves with the opium, at the same time that the gallic acid as-

¹ Case LXXII. in 2d edition.

tringed the mucous membrane, and restrained the over-secretion of mucus, which the patient's general catarrhal diathesis otherwise displayed rendered probable to be present in the stomach. The rhubarb I think was designed to prevent constipation arising from the other ingredients. As a rule I like aloes best for that purpose in gastric cases, and I do not know why I ordered rhubarb here.

Sometimes when lads begin shoemaking early, before the bones have got quite hard, a peculiar deformity is produced, which acts like a perpetual pair of stays for life.

CASE CCCXLVII.¹—William H—, aged 25, bootmaker, was admitted to St. Mary's, June 7th, 1856, for pain at the pit of the stomach, which had been almost constant for four years, and was increasing. The pain was accompanied by a local sensation of cold, and what he described as a "dragging." He often felt nausea, but never actually vomited. On examination of the epigastrium there was seen an indentation of considerable depth, and deepest in the middle, which he said was caused by the wooden instrument used in bootmaking, at which he had worked "all his life." The part was painful on pressure. His general health did not seem much broken, and the specific gravity of the urine was 1.020. With rest, nitrate of bismuth, and iron, he lost his symptoms, and was discharged from care June 21st.

But of course it was to be expected that his symptoms would return; for these men spend fourteen hours a day with their heads bent down close to their knees, pressing a hard stick into the stomach; and the injury which was once done could not but be aggravated by time.

The final blow to the stomach given by this trade is exemplified in the next case:—

CASE CCCXLVIII.²—James P—, a shoemaker, aged 37, was admitted to St. Mary's May 4th, 1860. He said he had never been well since he was 21. His bowels were never moved of their own accord, he occasionally vomited, and he had a perpetual pain in the right side of the epigastrium, which he called his "liver." He continued in this state till 1855, when, as he was vomiting, there flew up a sudden gush of blood. Since then the same thing happened five times, the last time the night before admission. He did not throw up any blood when in the ward, but his statement was confirmed by the passage of a considerable quantity, liquid and clotted, from the bowels. Acetate of lead stopped the hemorrhage, and by dint of complete rest and pepsin he was able to take the ordinary diet of meat and

¹ Case LXXIII. in 2d edition.

² Case LXXIV. in 2d edition.

vegetables, with the addition of a pint of beef-tea at dinner, for a week before he went out on the 25th, at that time having quinine three times a day.

The rapid, though probably only temporary, relief of the pain in the epigastrium and the regained power of taking food, shows how much might be done in those cases by rationally removing the original cause of the complaint. No greater blessing to the artisan was ever invented than the Upright Shoemaker's Table, introduced by Mr. Sparkes Hall to the trade. At it the workman stands or sits on a high stool at will, holding his work fixed by a strap and stirrup regulated by the feet. Thus all pressure on the epigastrium is avoided, and Mr. Hall tells me that many of his most skilled hands who used to be off work from illness nearly half their time, and driven to drink to drown pain the rest, can now earn daily wages, and are become temperate rich men.

The difficulty lies in the change of method—by no means a light difficulty. A visit to the Egyptian room of the British Museum shows that shoemakers have worked in a doubled up posture at least since the days of the Pharaohs, and we cannot expect them to alter in a moment what certainly has some conveniences. Moreover all do not suffer. A stomach in a perfectly robust condition probably can resist even this daily compression. But when occasionally it is joined to fusty cold workshops, long abstinence, tipping, accidental illness of any kind, then it tells chronically, and the injured part is unable to recover itself. The *dura ilia* make a bad use of their blessings by deterring the weaker vessel from the trouble of learning a new method, and are aided by the lazy conservatism natural to the ignorant. Still I think it is our bounden duty to advise all shoemakers we come across to adopt the upright bench, and perhaps in time we may succeed.

A similar condition to that which occurs in shoemakers I once found produced in a tradesman's wife, a patient of Mr. Lockhart Clarke, by sitting long hours at an office desk which presses against the epigastrium. As far as I can recollect she vomited blood and mucus, but I cannot find my notes of the case.

I have not seen this evil produced by the constrained posture of tailors. They generally suffer the consequences of drinking and bad ventilation, but not hæmatemesis.

SECTION XI.

Abuse of Purgatives.

There is no habit so pernicious to the gastric digestion as systematically taking purgative drugs. And there is no bad habit so common.

It is commenced sometimes from mere caprice and imitation.

CASE CCCXLIX.¹—I saw last week a fine tall girl of seventeen at home for a few days from school. Her mother noticing how pale and listless she was, inquired into her daily doings, and got out a confession that nearly all the scholars were addicted to drenching themselves with pills; this made them thirsty, and they topped off with another purgative, "lemon kali" (an adulterated bitartrate of potash) several times a day. As my young friend had never taken physic in her life, except a few homœopathic globules given by the mistress of a former school, and some conventional draughts during the measles, this discipline made her ill; and it opened my eyes to the ease with which bad habits may be acquired. Even in her case it had begun to produce a sensitiveness to the presence of anything in the excretory viscera, which very quickly grows in intensity, and renders the abstinence from purgatives soon a positive deprivation. (*September, 1866.*)

It is the increase of sensitiveness which does the harm; for shortly this sensitiveness, commencing probably in the intestines, spreads to the stomach, and the presence of food there gives pain, and cannot be borne for the time requisite to normal digestion. The food being undigested, costiveness results; an increased demand for purgatives is made; sometimes even a medical man is induced to order them or to sanction them, and the difficulty of breaking the habit becomes really formidable. I found even a homœopathic physician, who placed his daughter under my care, had been persuaded to allow the growth in her of this living on poison.

The ill-health induced by purgatives is all the more serious in that it affects the most important classes of aliments. In Case LXII. an illustration is given of the indigestion of fat, in Case LIV. of the indigestion of meat arising from this cause.

There is usually great difficulty in eliciting evidence of purgative habits; all the more so the higher in rank and more educated the victims are. Now and then a sensible country girl will make a confession which puts to shame her more refined sisters:—

¹ Case LXXXV. in 2d edition.

CASE CCCL.¹—Emma W—, aged 25, a well-built strong country-woman, had to come to London in the summer of 1851 as a nurse to the children of an old friend of mine. Since then she had suffered from pain in the epigastrium (originally excited by tight lacing), waterbrash and debility. Her tongue and face were getting anæmic. For some months her fellow-servants and mistress had been dosing her with purgatives. She said she certainly did feel lighter after she took them, but in spite of that she had sense to remark that she was getting worse and worse, and could not but attribute it to the drugs. Yet she fancied she could not do without them, and feared she should be obliged to leave London and her comfortable place. This was on December 4th that she was sent to me. Before the end of the month, by simply leaving off purgatives gradually, and taking a little iron, she lost her gastralgia and other stomach symptoms, gained strength and spirits, and remained in London many years a valuable servant, till the junior branches of the family left the nursery.

In the above case it is mentioned that purgatives were left off "*gradually*," this I usually accomplish by giving moderate doses of aloes and myrrh in pill, and with each change of prescription increasing the proportion of myrrh and diminishing that of aloes, then dividing the pill into two, and at last omitting it altogether. Another expedient is to recommend small cold-water enemata which are not really purgative at all, and allow the bowels to act spontaneously, at the same time as they cool the rectum and take off any feeling of congestion and tenesmus, acting, in fact, as a sort of shower-bath.

The indigestion following choleraic diarrhœa, of which Cases XVIII. and XIX. are instances, is very much kept up by the habitual taking of purgatives.

CASE CCCLI.²—T. E. D—, a surgeon, aged 69, who had passed many years in India, consulted me about himself, February 4th, 1867. Though exposed to epidemic and other noxious influences of tropical climates, he had never suffered from them; and this exemption he attributed to a congenital slowness of digestion having kept him from the self-indulgent habits of excess which a few years ago were so common among our countrymen abroad. Last year, however, being at Edinburgh during the invasion of cholera, he was attacked with diarrhœa, which was succeeded first by constipation, and that by a return of diarrhœa, which then assumed a chronic form. Then he caught a severe cold on the chest, on which the abdominal affection ceased. But on the cough being relieved, the looseness of bowels returned.

He described himself as being woke up at four in the morning by a feeling of discomfort about and above the navel, then there was as

¹ Case LXXXVI. in 2d edition.

² Case XX. in 2d edition.

it were a working or fermentation in the belly generally, and sometimes a burst of wind upwards by eructation, but more commonly a resonant gurgling, and then followed a feeling of relief without any explosion *per anum* necessarily taking place. After breakfast there was again discomfort and flatulence. The stools were either watery or pultaceous, with occasional lumps of ragged matter. The urine was variable, often pale and watery, often thick and highly colored. The pulse had the emptiness and sharpness indicating the inelastic arteries of old age, and was quicker than natural. The palms were hot and dry. The tongue was white and furry. The appetite was good, and the usual diet of the easy classes was taken with satisfaction and without any consequent epigastric distress.

I found that he had a "dinner-pill" of his own, consisting of colocyath, ipecacuanha, and henbane, which he took before dinner, and then he said there was an action of the bowels before going to bed, and the morning discomfort was alleviated if not prevented. Still it returned again, and he thought it got worse. He therefore had somewhat lost faith in his favorite pill, and having to his surprise experienced much solace from a few drops of chlorodyne taken at night, came to consult me about it.

I advised him entirely to give up the purgative pill, to take the chlorodyne for a short period, then to try and do without it, and to have a *bouillon* and a glass of wine for breakfast, instead of the ordinary British fare.

I have known a course of purgatives persisted in by a medical practitioner in the vain hope of making the fecal evacuations of his patient more healthy in aspect and odor.

CASE CCCLII.¹—I was summoned in April, 1861, a long distance into the country to see Mrs. G—, a young married woman, whom I found confined to bed with paralysis of the lower extremities and occasional vomiting. As my coming had been debated and arranged some days, I found prepared for my reception a long row of vessels, set in order of time, containing what had passed from the bowels. Each one was more unnatural, more fetid, more ragged, and with more undigested matter in it than the former. The medical attendant had been purging vigorously, and intended to go on purging vigorously, in spite of the obstinacy with which the patient got worse. When the gray powder, &c., was exchanged for beef-tea enemata, milk, mutton chops, and pepsin, a rapid improvement followed. In subsequent letters I heard no more of foul stools.

Some persons seem to imagine that the degree of its fetor is an evidence of the length of time fecal matter has been retained in the intestines. Whereas the direct contrary is the case; in a quick passage alimentary substances ferment and decay, and develop sulphuretted hydrogen. If they are retained, the fetid gases are

¹ Case LXXXVII. in 2d edition.

carried off elsewhere. In cases of death from obstruction, the contents of the bowels are but slightly offensive.

Sometimes purgatives are given under medical advice to cure costiveness. They in fact make it worse; as may be proved by the improvement that accrues on leaving them off.

CASE CCCLIII.—November 16th, 1869. Dr. B— brought me his niece, aged 37, complaining of pain in the epigastrium between each meal, pyrosis several times daily, weakness, and emaciation. Her bowels were never opened except artificially. Her uncle said he had given her “blue pill, and all sorts of things,” and had made her leave off all the different articles of diet, to cure this state, but without effect. I ordered her quinine, strychnine, and henbane, desired her to eat one vegetable meal and two animal meals daily, and to let her bowels alone. In ten days she returned much better, and again on December 13th a further improvement was reported. But I have no note as to whether her bowels were ever opened or not. I dare say they were.

The superstitious use of mercurials is very singular. They are supposed to make the alvine excretion normal, though the only visible result is its becoming more abnormal with each dose. They are supposed to do good by “acting on the liver,” whether the liver is acting too little or too much. They are supposed to “act on the liver,” though it has been shown by Dr. Scott’s experiments¹ that the quantity of bile is not increased, nay, it is rather diminished when mercury is taken. All that the metal can be really seen to effect on the hepatic function is a poisoning of the bile, so as to prevent absorption by the ilia, and to cause the secretion to be rejected in excess and in a liquid form *per anum*; and that is a very doubtful advantage to most invalids.

The only effect at all desirable following mercurial purgation, and which in fact seems to constitute for patients the attraction to its use, is the relief of certain cerebral symptoms, giddiness, *muscæ volitantes*, dark globes in the sight, singing in the ears, &c., which result from excess of venous over arterial blood in the brain. It acts in this case as a destructive upon the venous blood, and adjusts the balance by subtraction. Time after time, as the rough expedient is resorted to, the strength is lessened by it, and the necessity for its use appears greater more and more subtraction is required.

¹ Beale’s “Archives,” vol. i. p. 209.

The good and true way of restoring the circulation to its normal condition is by addition, by increasing the supply of new-made blood to the arteries.

The acute effects of mercurial action on the stomach is shown in the following case:—

CASE CCCLIV.—Lieutenant S—, affected with syphilitic secondary ulcer of the tongue, and with sore-throat, in May, 1867, was taking mercury under my direction together with iodide of potassium and sarsaparilla. On the 25th he came to be inspected, and then, finding the gums were becoming red and tender at the edges, I left off the mercury. S— said it had only been the last few hours that the gums had been tender, but that he guessed it was coming on by the “indigestion” he had suffered from for a couple of days. He felt fidgety, thirsty, faint, and incapable of exertion: he lost his appetite, and the food which he did swallow caused nausea and lay like a weight at the epigastrium. There was a temporary increase in the mucus collected in the fauces.

S— had been affected with constitutional syphilis for a year and a half, and had taken no mercury previously to the short course prescribed by me. He took it only a week, in six-grain doses night and morning, and then, as before mentioned, it was left off. He quickly recovered his appetite, and was pleased to find the psoriasis of the tongue and the sore-throat at the same time decline, get quite well in a few days, and not return, though he had no more medicine beyond the iodide of potassium mixture for a fortnight longer.

It may be mentioned that Lieutenant S— had been taking iodide of potassium for several months before I saw him. His experience of it was, that it kept the symptoms somewhat in abeyance whilst he continued it, but that directly it was left off they returned as bad as ever, and that no cure was effected, such as followed the use of mercury.

The artificial dysentery of mercurialization will also sometimes be followed by a chronic condition of constipation even before it has brought on gastric indigestion.

CASE CCCLV.—Mrs. R. C—, aged 41, has passed much of her life in India, and when there had several attacks of malarious fever, but never dysentery, and bore six children rather rapidly. In 1864, having some irregularity of the reproductive organs, she placed herself under the care of a physician who salivated her with repeated purgative doses of mercury. Since then her bowels have never been open without medicine, she had gradually more and more suffered from pain in the stomach, towards the right side of the epigastrium, and palpitation of the heart; so that in fact she came to me principally to ascertain whether or not she had incurable cardiac lesion. She had grown weaker and more anæmic month by month, and had

that pain after the catamenial periods which weakly persons so often suffer from.

By her account the feces were sufficient as to quantity and color, but were not passed on without artificial aid.

A step in the right direction had been made by the surgeon who sent her to me, having already ordered her some extract of nux vomica and henbane with the colocynth she still took nightly. I carried on the same indication by prescribing 3 grains of aloës and myrrh pill with $\frac{1}{20}$ of a grain of strychnine, with directions after five days to cut the pill in two and take only half.

I added also a draught twice a day containing two grains of quinine and $\frac{1}{30}$ of a grain of strychnine in lemon-juice.

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